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# Developing teacher–researcher partnerships to investigate best practices: Literacy learning and teaching in content areas of the secondary school

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# 1. Literature review

This literature review is intended to provide a background to the project undertaken and described in this report. In essence the project seeks to apply a research-based model of literacy instruction developed in New Zealand to investigate the efficacy of the model in raising student achievement. It is our intention to do so using collaborative teacher and researcher partnerships in order to investigate and interrogate the ways in which the model can respond to the needs of specific students, teachers, and schools. This being the case, the literature on adolescent literacy is reviewed, effective instructional approaches are evaluated, and the outcomes of "successful" interventions are described. Secondly, we investigate the literature on effective professional development, and in particular the efficacy of research partnerships for promoting teacher learning and practice.

## Adolescent literacy

Over the past 25 years, the field of adolescent literacy has changed dramatically (Vacca & Vacca, 2007) as the "research base that supports our knowledge of oral and written language development, linguistics, psychology, and other areas related to literacy has expanded" (Sturtevant & Linek, 2004, p. 4).

The contemporary field of adolescent literacy is underpinned by broadened constructs of learner, text, and context, and by considerations of the social and cultural demands placed on secondary learners (Lester, 2000; Moje, Dillon & O'Brien, 2000). The field takes into account adolescents' literacy practices beyond the secondary classroom, adolescents' expanded notion of text, and the relationship between literacy and the development of identity (Moje, Young, Readance & Moore, 2000; Moore, Bean, Birdyshaw & Rycik, 1999; Patel Stevens, 2002). Contemporary conceptions of adolescent literacy are perhaps best summed up by the International Reading Association's (IRA) position statement on adolescent literacy:

> Adolescents entering the adult world in the 21st century will read and write more than at any other time in human history. They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. They will need literacy to cope with the flood of information they will find everywhere they turn. They will need literacy to feed their imaginations so they can create the world of the future. In a complex and sometimes even dangerous world, their ability to read will be crucial. Continual instruction in literacy beyond the early grades is needed (Moore et al., 1999, p. 99).

## Literacy learning

Instruction beyond the early grades is necessary not only to equip adolescents for the adult world, but to enable them to successfully navigate the world of secondary school. Given that the nature of the texts that adolescents are required to interact with has changed significantly, and that the literacy demands that secondary schools place on adolescents have increased in complexity (and may well be greater than those of the primary school (Christie, 1998; Ivey & Broaddus, 2000), the nature of the actual literacy skills required for success across the curriculum has changed.

In addition to mastering content knowledge in a wide variety of disciplines, teenagers need to develop "content literacy" (Sturtevant & Linek, 2004; Vacca & Vacca, 2007). Content literacy is a relatively new term which refers to the ability to learn effectively through reading, writing, viewing and discussion, in every content area. According to Vacca and Vacca (2007, p. 10) a

> variety of classroom-related factors influence content literacy in a given discipline, including:
>
> The learner's prior knowledge of, attitude toward, and interest in the subject;
>
> The learner's purpose for engaging in reading, writing, and discussion;
>
> The language and conceptual difficulty of the text material;
>
> The assumptions that the text writers make about their audience of readers;
>
> The text structures that writers use to organise ideas and information; and
>
> The teacher's beliefs about and attitude toward the use of texts in learning situations.

In order to experience success across the curriculum, students need to be aware of the extent to which the distinctive discourse forms of different disciplines will affect their ability to make sense of the new material they encounter (Dean & Grierson, 2005; Stowell, 2000; Unsworth, 2001). Specifically, secondary school students are required to use the skills and strategies developed during early reading instruction, and their prior knowledge, to interact with text to interpret and construct meaning before, during, and after reading. In particular, and as distinct from primary schools, secondary schools require that students: read large amounts of text; learn specialised and technical vocabulary; master knowledge of the various text structures that are used to organise subject material; and make meaning from the texts that are predominantly used by teachers as the basis of instruction (Bryant, Ugel, Thompson, & Hamff, 1999). To engage in meaning making at a sophisticated level, students must be able to think beyond the literal recall of content-area facts and they must develop the skills to interpret, apply, and interact with a wide variety of texts at a variety of levels (Ruddell, 1996).

However, there are large numbers of students who struggle to develop content literacy (Author, 2002, cited in Hall, 2005; McDonald & Thornley, 2004). National and international achievement statistics indicate low levels of literacy achievement for secondary school students along with disparities in achievement (Crooks & Flockton, 2000; Flockton & Crooks, 2001, 2002; Greenleaf,

Schoenbach, Cziko, & Mueller, 2001; McDonald & Thornley, 2005; Ministry of Education, 2003), and support the "notion of a literacy crisis" in secondary schools (de Leon, 2002, p. 2).

The difficulties that most adolescents who struggle with reading face are not caused by an inability to decode words but by the fact that they have limited vocabularies and/or lack broad background knowledge to apply to their reading. Students find that their literacy endeavours are hampered because they are unable to "get beyond the words", to get access to bigger and more complex ideas (Darwin & Fleischman, 2005). As Delfino (1998, pp. 17–18) explains:

> Most students for whom English is the primary language can read, if by reading we mean the decoding of words. But that is the problem. They read word-by-word, and these isolated words do not add up to any larger meaning for them. They are not engaged in the text when they read; they do not use the strategies that good readers use automatically. They don't realise that reading their science book will require any different skill, action, or response from what they experience when they read a novel. They don't see pictures as they read; they don't make predictions as to what will happen next or what someone will say. They respond literally and don't think metaphorically. Because they don't make predictions, they don't see irony or the juxtaposition of thought or actions that engage and delight successful readers. These students do not turn to books when they need to escape or when they want to meet new friends. They do not turn to books when they want to visit new places or experience exciting adventures. They do not turn to books when they yearn to visit the future or learn from the past. For these students, reading brings only frustration and failure.

## Effective literacy instruction

In order to support students to meet the literacy challenges of secondary school, and to develop content literacy, it is vital that teachers plan and implement instruction that facilitates both content knowledge and literacy learning. Teachers' content literacy knowledge is an important factor in student achievement, and teachers who provide content literacy instruction can impact strongly on their students' current and future success (Sturtevant & Linek, 2004; Vacca & Vacca, 2007). However, many teachers lack knowledge of the literacy challenges inherent in different curriculum areas and are ill-equipped to teach students to meet those challenges (Darwin & Fleischman, 2005; Hall, 2005; Thornley & McDonald, 2002). Historically, direct literacy instruction in secondary classrooms has been limited to the development of study skills and vocabulary knowledge (Hall, 2005). When students have encountered difficulties with texts, teachers have commonly responded by ameliorating texts and providing students with key ideas and concepts through alternate means such as inclass lectures, producing notes, and tutorial books (McDonald, Thornley & Fitzpatrick, 2005; Schoenbach, Greenleaf, Cziko & Hurwitz, 1999). According to Darwin and Fleischman (2005, p. 85), "this practice may actually circumvent students' need to improve their literacy skills, thus avoiding the problem rather than addressing it".

In order to effectively address students' needs in order that they can improve their literacy skills, teaching must account for students' prior experiences (in relation to content, text, and text reading

and writing) and must provide opportunities for students that will help them to explore, discover, and think critically within specific disciplines (Lester, 2000; McDonald & Thornley, 2004; Moore & Murphy, 1987). To these ends, teachers need to use their content expertise along with their knowledge of learning processes and instructional strategies, to negotiate and to make explicit the specific ways in which students are required to interact with texts for their content areas (Hall, 2005; Lester, 2000). As Vacca and Vacca (2007, p. 7) explain:

> Teaching content well means helping students discover and understand the structure of a discipline. The student who discovers and understands a discipline's structure will be able to contend with its many detailed aspects. From an instructional perspective, teachers must help students see the 'big picture' and develop the important concepts and powerful ideas that are part of each subject …. To help students become literate in a content area does not mean to teach them how to read, write or talk as might be the case in a reading or English classroom. Instead reading, writing, talking, and viewing are tools that students learn to use with texts in content areas.

Norrie and Lenski (1998) argue that the role of the teacher is critical in guiding students to think in various ways about texts as they are read. They suggest that for teachers to achieve this they must encourage students by responding to them in generative ways that prompt their students to understand, to clarify, to validate, and to raise questions. Viewing the teaching and learning process in this way means that building students' skills as readers and as manipulators of information becomes an act of negotiation overlaid by the teacher's knowledge of literacy processes as they relate to their content area (Moje, Dillon, et al., 2000).

Teachers hold a wide range of beliefs about literacy instruction in the content areas. These beliefs include: that content-area teachers either cannot or should not teach literacy; that teaching literacy in the content areas is important; that content-area teachers would like to teach literacy but do not know how; and that teaching literacy is the responsibility of others, for example English teachers and/or reading specialists (Hall, 2000).

The belief that literacy instruction is someone else's role has been particularly widespread amongst content area teachers (Behrman, 2004; Denti & Guerin, 2004). For example, secondary teachers who participated in a study reviewed by Hall (see Bintz, 1997, cited in Hall, 2005) acknowledged that their students had reading difficulties but they did not believe that they should work to improve this. According to Denti and Guerin (2004, p. 115), "the statement 'I've never taught reading and I don't know how' expresses an accurate self-evaluation of many high school teachers". In response to opinions of this nature, Vacca and Vacca (2007, p. 7) argue that:

> The pursuit of content literacy does not diminish the teacher's role as a subject matter specialist … who's in a better, more strategic position to show students how to learn with texts in a particular content area and grade level than the teacher who guides what students are expected to learn and how they are to learn it?

Just as it is important that teachers believe that they are teachers of literacy, it is equally crucial that they believe that their students are capable of success. As Hill and Hawk's (2000) study of effective teachers in Achievement in Multicultural High Schools (AIMHI) schools suggests, it is a

combination of beliefs held by teachers about their work and about their students that contributes to the development of effective teachers. It has been shown that teachers' attitudes towards their students affects the quality of educational opportunity available to those students (Alton-Lee, 2003; Cook, Tankersley, Cook & Landrum, 2000), and the importance of the holding of high levels of expectation for students has been well documented Ministry of Education, 2004). According to Carpenter, McMurchy-Pilkington and Sutherland (2000), the set of beliefs driving effective teaching practices must include the recognition that students can take responsibility for their own learning when teachers support them to do so, a personal and public passion for teaching, and a strong sense of connectedness with students and their worlds (see also Bishop, Berryman, Tiakiwai & Richardson, 2003).

## Professional development in adolescent literacy

Training or transmission models of professional development have historically been the primary vehicle for the delivery of teacher professional development. Traditional models have been criticised because of their focus on learning content knowledge, and their underlying assumption that teachers are knowledge recipients (Timperley, Phillips, & Wiseman, 2003; Timperley & Wiseman, 2003) and because they fail to consider the contextual circumstances of teachers, students, and schools or to take account of teachers' knowledge and previous learning experiences (Ball & Cohen, 1999; Borko, 2004; Guskey, 2000; King & Newmann, 2000; Putnam & Borko, 1997). A particularly damning criticism along these lines is levelled at traditional forms of professional development by Fullan (1991, p. 315, cited in Hawley & Valli, 1999, p. 134) who states that "nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences that led to no significant change in practice when teachers returned to their classrooms".

Certainly, there is little record of professional development programmes leading to changes in practice that result in changes in student achievement (Earl & Katz, 2002; Little & Houston, 2003). It is becoming increasingly clear that teachers' professional development and learning is fundamental to raising student achievement (Poulson & Avramadis, 2003; Taylor, Pearson, Peterson, & Rodriguez, 2005, Timperley & Phillips, 2003), and consequently improving student outcomes has become a primary rationale and purpose for professional development (Hawley & Valli, 1999).

A number of elements that are characteristic of the type of professional learning which supports teachers towards the type of literacy instruction that can improve their students' outcomes have been identified in the school change, professional development, and adolescent literacy research literature. Specifically, effective professional development in adolescent literacy acknowledges the complexity of adolescent literacy and the necessity for literacy instruction, and it is characterised by a shared vision for literacy reform amongst all stakeholders (Bean & Harper, 2004). Such professional development is ideally located in collegial communities of practice

(Birman, Desmone, Porter, & Garet, 2000; Fernandez, 2002) and supported by strong instructional and collegial leadership (Poulson & Avramidis, 2003; Taylor et al., 2005).

Furthermore, for professional development in adolescent literacy to be effective, it needs to be firmly based in both relevant research and in the realities of school life and teachers' daily practice (Elmore & Burney, 1997; Fernandez, 2002; Hawley & Valli, 1999). It also needs to be informed by student learning data, including students' perceptions (Kershner, 1999) and information about teachers' practices and beliefs, in order to encourage teachers to reflect on and analyse their students' learning alongside their own theories, beliefs, and values and the ways in which they might use various content-literacy methods and strategies within the secondary school context (Bean & Harper, 2004; Kinnucan-Welsch, Rosemary & Grogan, 2006; O'Brien, Stewart, & Moje, 1995).

## Teacher–researcher research partnerships as professional development

Several writers (for example, Cole & Knowles, 1993; Robinson, 2003; Saunders, 2004) have pointed out the commonalities between research and teaching, noting that the practice of each requires many of the same dispositions, skills, and understandings; that is, "attitudes of openness, intellectual curiosity, and a willingness to step outside a frame of reference to see things in new ways" (Robinson, 2003, p. 28). In Saunders' view:

> Researching and teaching have this in common, at the very least. They are about knowledge-creation and imaginative meaning making, in publicly accountable ways, in a complex and unpredictable world. The focus today must therefore be on illuminating how teachers can be enabled to exercise research-informed professional judgement in the service of a creative practice (2004, p. 164).

Although these commonalities would seem to suggest that the road to creating and sustaining teacher–researcher research partnerships is a smooth one, there are inherent tensions in the relationships between teachers and researchers and the cultures in which they function (Cousins & Simon, 1996; Graham, 1998). This literature review explores, and takes account of, these tensions as it considers the central question of how teachers and researchers can conduct and perform research, not only in the service of a creative practice, but also in partnership with each other and, most importantly, in the service of improving student outcomes from, and experiences of, schooling.

This review draws on literature from the fields of action research, critical inquiry, and professional development. It also pays attention to the Teaching and Learning Research Initiative's (TLRI) position and perspectives on teacher–researcher research partnerships.

Much of the literature around teacher–researcher research partnerships has been generated by the school professional development movement and, as such, primarily deals with school and

university partnerships (Lacina, 2006), which are generally located within professional learning communities or communities of practice (Graham, 1998). Frankham and Howes (2006) view the communities of practice model as a useful one for analysing the learning and commitments of colleagues working together. They do, however, caution against "using the concept [of a community of practice] normatively, with features of communities of practice identified and then used as indicators of the appropriateness of relationships and processes in a particular setting" (p. 629).

In reality, there are a range of models for communities of practice, and partnerships play out in various ways and take various forms. Graetz, Mastropieri, Scruggs, and Agosta (2004), for example, outline two options. The first option involves researchers asking teachers to implement specific interventions in their classrooms and, therefore, teachers assuming the role of the intervener rather than the designer of research. Alternatively, researchers ask teachers to identify the challenges in their classrooms, and teachers and researchers then work together to identify possible solutions in the research literature and to create systematic research designs to evaluate the proposed solution (see Greenwood, Tapia, Abbott, & Walton, 2003, for a discussion of a similar model to this second option).

In the New Zealand context, Oliver (2005) examined teachers' experiences in five TLRI projects. The projects in Oliver's study fell into two areas of inquiry. The first emphasised the teacher and teaching. Researchers provided teachers with strategies to reflect on their practice and guided and mentored them to make changes to practice and methodology in order to enhance their teaching in general and/or better align their practice with curriculum developments. Change in teacher practice was implicit in the second area of inquiry, which focused on students, student learning, or curriculum. The teachers' roles were to test students, analyse the results, and develop theories, findings, and recommendations that would enhance student learning.

## Collaboration is central to research partnerships

The idea of partnership which is prioritised by TLRI is that of partnership as a reciprocal process which builds teachers' and researchers' research capability and deepens their understandings of teacher practice. This notion of partnership extends to partnerships between teachers and is underpinned by a premise of collaborative knowledge building and sharing of tasks (Oliver, 2005).

Similarly, within the international literature, collaboration is held as central and critical to teacher–researcher research partnerships whatever specific forms and foci the partnerships may have (Corden, 2002; Goodnough, 2004; Graetz et al., 2004). Collaborative research enterprises are viewed as ones where people work together to create and produce knowledge that can benefit individuals, the group, or both. A distinction is sharply drawn between partnerships that are collaborative and those which are "merely cooperative" (Goodnough, 2004, p. 323). In contrast to collaboration, co-operation is seen to focus on individual learning, encouraging people to help

each other out, and often amounting to nothing more than teachers' co-operation with researchers' research agenda (Cole & Knowles, 1993; Goodnough, 2004).

In drawing the distinction between collaboration and co-operation, a number of writers emphasise the "essentiality of negotiation" (Cole & Knowles, 1993, p. 488) to truly collaborative research. Negotiation is seen as an ongoing process which includes negotiating roles, responsibilities, status, commitment, and available energies (Cole & Knowles, 1993; Goodnough, 2004). Such a process is evident in Graetz et al.'s (2004) description of a partnership between school and university personnel. The partnership was centred around a classroom problem where, because participants considered that the collaborative relationship was critical, "*nothing* [italics added] was undertaken without discussion among the participants" (Graetz et al., 2004, p. 277).

A cautionary note is sounded in this regard by Cole and Knowles, who assert that:

> Collaboration for collaboration's sake seems counter-productive. True collaboration is more likely to result when the aim is *not* for *equal* involvement in all aspects of the research; but, rather, for *negotiated and mutually agreed upon* involvement where strengths and available time commitments to proceed are honoured. (1993, emphases in original)

As the preceding would indicate, collaboration, as it is conceptualised and enacted in the context of teacher–researcher research partnerships, is complex, and at times, problematic. It is particularly problematic that the culture of schools and universities differ dramatically in focus, tempo, and rewards (Graham, 1998). Berger et al. (2005) assert that teacher research is contrary to the culture of schools, noting that the collaborative, collective orientation of research groups is at odds with school cultures that typically support teaching as an isolated activity and "assign peculiar meanings to equity, collaboration and excellence" (p. 103).

Clearly, then, the notion of collaboration resists simple definitions. According to Frankham and Howes (2006, p. 627), it is the very "unknowability" of concepts such as collaboration, relationship, and partnership that define them, and it is therefore difficult to provide exact criteria for the types of relationships and processes that constitute collaborative research partnerships.

This difficulty is compounded by contrasting views on aspects of collegiality. For example, Lacina (2006) holds that respect and collegiality should be developed prior to a collaborative project, whereas the results of Frankham and Howes' study of the role of university researchers, in a project aimed at developing inclusive practices in schools through collaborative action research, suggest the opposite. As Frankham and Howes (2006, p. 617) note:

> One of the issues highlighted is that it is in the process of setting up an action research project that many disturbances are evident and, perhaps, inevitable. We argue that it is in working with these disturbances that one might begin to establish the basis of a collaborative relationship, rather than implying that collaboration may result in such things.

The complexities involved in providing a template for collaborative research relationships notwithstanding, a number of writers (for example, Cole & Knowles, 1993; Goodnough, 2004; Graetz et al., 2004; Lacina, 2006; Oliver, 2005) agree that certain conditions need to be present

for research partnerships to be truly collaborative. Collaborative research relationships are underpinned by:

> The understanding that each partner in the inquiry process contributes particular and important expertise, and that the relationship between the classroom teacher and the university researcher, for example, is multi-faceted and not powerfully hierarchical. (Cole & Knowles, 1993, p. 478)

Based on this understanding, collaborative research partnerships accord equal status to all partners; are typically founded on participants' common values and beliefs; and are underpinned by fundamental assumptions about the importance and mutuality of goals, interpretation, and reporting, and about the potency of multiple perspectives (Ball & Cohen, 1999; Borko, 2004; Putnam & Borko, 1997).

## Teachers as partners in research relationships

In addition to the conditions discussed above as being necessary for collegiality, teacher ownership is seen as central to collaborative research partnerships. Hargreaves (1994, in Lacina, 2006) found that teachers resent prescribed collegiality, especially when they see no direct relationship between the collaborative initiative and their own classrooms. As both Lacina (2006) and Oliver (2005) emphasise, teachers must have a voice in choosing with whom they want to collaborate and when to collaborate. It is also important that teachers have a voice in the nature of the inquiry. Goodnough (2004, p. 324) notes that:

> in order to foster collaborative inquiry the participants need to experience empowerment throughout the process. One way to do this … [is] to structure an experience in which teachers would determine the research questions and how to design action research projects … to explore an issue or problem that would be most meaningful for their professional practice.

However, the process of teachers initiating, designing, and conducting research is not necessarily straightforward. Simply developing a teacher culture which values and expects evidence-based discussion of the quality of teaching and learning is problematic and, at a fundamental level, teachers' conception of research and of themselves as researchers can impact on their ability to engage in research activities. For example, teacher-researchers in one of the schools in Berger et al.'s 2005 study initially

> struggled simply with the *idea* of qualitative research thinking of it as foreign and distant … they report that that it took them months and months to even feel comfortable beginning to pose questions and that those early questions were awkward and unanswerable—either enormous and unwieldy or too small and uninteresting. (emphasis in original).

Like the teachers in th school from Berger et al.'s study, teacher-researchers in Graham's (1998) study had had limited experience as classroom researchers and also struggled with the idea of "research". To these teachers, "research was a devil word" (p. 255), representing situations where

researchers who were isolated in universities knowing "little and caring less about classroom complexities" passed down theories for practitioners to implement.

In a similar vein to teachers experiencing researchers as arrogant people who are ready to criticise and recommend change without appreciating the complexity of the contexts they are investigating, researchers can experience teachers as defensive, suspicious, and unresponsive, with a limited understanding of the intellectual and practical challenges involved in doing worthwhile research (Lacina, 2006; Oliver, 2005; Stipek, Ryan & Alarcon, 2001). Furthermore, researchers may be reluctant to enter into full collaboration with teachers because they are unwilling to relinquish their status and power as experts at "doing research" (Cochran-Smith & Lytle, 1993; Sweeney, 2003; Zeichner, 1995). As noted by Cousins and Simon:

> Differences in power and stature between researchers (traditional producers of knowledge) and users (traditional receivers of knowledge) and the formers' desire to maintain its privileged position may lead to inadvertent or unconscious acts that are consistent with its motives or even to mischievous behaviours designed to protect the status quo. (1996, p. 202)

The attitudes outlined above, linked as they are to those tensions between university and school which are rooted in issues of power, status, and authority (Frankham & Howes, 2006; Graham, 1998; Lacina, 2006), are indicative of the "oppositional discourse" (Robinson, 2003, p. 27) of practitioners versus researchers. According to Graham (1998), the attitudes associated with this oppositional discourse are enormous obstacles to overcome and require a shift in assumptions and expectations about who creates, and what counts for, knowledge and in roles and responsibilities.

The roles and responsibilities of teacher and researcher within partnerships are clearly not as uncomplicated or unproblematic as conventional constructions of these roles and responsibilities (as equal, straightforward, and unproblematic, with the teacher bringing the perspectives of practice and the researcher bringing the theoretical perspectives (Frankham & Howes, 2006)) would suggest. As previously indicated, teacher inexperience and lack of familiarity with research processes can complicate the processes of collegiality and teacher ownership that are inherent to collaborative research partnerships. Furthermore, without ongoing support, the results of teacher research can sometimes be less than optimal. As Berger et al. note:

> Teachers—like all new researchers—have trouble formulating researchable questions, connecting their data collection methods to questions they are asking, and drawing conclusions from the often messy data of schools and schooling. We found that when teachers were given confidence in their natural researching abilities without the benefit of additional skills or ongoing assistance, the research seemed quite simplistic. (2005, p. 102)

Teacher inexperience in "doing research" was discussed by Oliver in her (2005) report of teachers' experiences in five TLRI projects. In four of these projects the teachers became involved after academic researchers had formulated the research project designs and research questions. Although they had not had input into the overall aims, objectives, design, or methodology of their project, these teachers indicated that the research was well planned, they were happy with it, and

that they could have had some input if they had wanted to. They all felt that the research design and the framing of research questions were broad enough for them to write specific research questions and flexible enough to be contextualised within their practice and/or national educational initiatives.

Some of those teachers responded "yes and no" when asked to have input into the research and qualified this by noting that they were so unsure when embarking on the projects that they were in no position to make suggestions. As they engaged in conducting the research and became familiar with the research design and objectives they were able to make changes based on their experiences of the project. Oliver posits that "it is possible that if those teachers had been involved in setting the research objectives, designing the research or writing the questions, they may have been less unsure early on of the purposes of the project" (2005, p. 19).

In contrast, the four teachers in the other project in Oliver's study (all of whom had completed or were completing their Master of Education degrees) initiated their individual research projects and then worked together with researchers and other teachers involved in the project to construct the overall TLRI project. These four teachers designed their own research questions and designed and undertook their individual projects under the supervision of the researchers. Oliver thought that it was possible that these teachers were more likely to initiate research projects because they were in management positions (with less classroom contact time) and had established relationships with university researchers and academics to call on.

Lack of familiarity with research processes proved no barrier to teachers' equal participation in research partnerships in one school in Berger et al.'s (2005) study. In this school, teacher research was mandated by the principal; the principal and deputy had established a multitude of ways to discuss research across groups; every faculty member, including the principal, had an active research question; staff development time was used to teach (mainly quantitative) research methods; and faculty meetings were centred on data. In these ways teacher research was a "fully integrated part of every teacher's experience" (p. 99) and they owned the research. Berger et al. found that:

> Teachers did not seem to struggle with the idea of research even though many of them had had no experience with teacher research before. They found the quantitative methods of measuring, documenting and analysing … challenging, but none of them spoke of … [any] kind of lengthy struggle to develop researchable questions … These teachers clearly felt empowered about their teaching, felt more expert and certain about their craft and they connected their research directly to curricular changes and/or student achievement. (2005, pp. 99–100)

Berger et al. did note that some elements which they regarded as crucial to teacher research (specifically a focus on individual students and the central questions of self-examination and teacher roles and development) were not present in the teachers' conversations. This point notwithstanding, Berger et al. found that the research informed and promoted a high level of collaboration and that the teacher–researcher research partnerships which were enacted within the school were generally collaborative and successful ones.

Factors which Berger et al. identified as being key to this success included the research-driven culture of the school; a strategic choice of teachers; the perceived positive impact of the research; the researcher's conduct; a long-term commitment to research projects; encouragement to present research results to other staff and wider audiences; and, most especially, the principal's mandate and support of teacher research.

Berger et al. were surprised by how critical the work of the principal was (see also Lacina, 2006; Oliver, 2005). This was highlighted by the contrasting experiences in two other schools in their study. In one of these schools, following a state mandate, the principal had mandated research for all teachers. Some of the teachers were strongly resistant to this mandate and, consequently, the principal withdrew it with the result that more than half the teachers chose not to do research. The principal of the other of these two schools actively sought and gained funding for teacher research, and teachers were well paid for the research work they undertook (e.g. writing during vacations). When the principal left the school and the funding ran out (and was not reapplied for by the next principal, who did not value teacher research) research within the school ended.

Berger et al.'s "greater learning" (2005, p. 100) in this regard was that teacher research will not become a school-wide effort if it is not mandated, but that the principal who mandates the research must be extraordinarily careful about how they go about implementing and supporting such initiatives (Berger et al.., 2005; Lacina, 2006). Berger et al. described the paradox that was revealed in this instance as "teacher research must be mandated/ teacher research can't be mandated":

> [Teacher research] must be championed by a strong principal; it can't be owned by the principal …. It seemed an interesting paradox that the principal's key role would *require* strong leadership to mandate the research, set up the structures and then give ownership of the research to the teachers (2005, p. 101, emphasis in the original).

## Researchers as partners in research relationships

Another paradox that Berger et al. discussed centred on the role of the academic researcher. They framed this paradox as "there must be an outside actor; the outside actor's role is questionable" (p. 101). Outside actors were those who were generally based in universities, professional leagues, unions, or funding agencies. Whilst they were credited with bringing some important ideas, skills, and support to the teacher-researchers, none of the teachers or administrators that Berger et al. interviewed could point to exactly how the outside agent had been of use or what would have happened in the absence of such an agent.

In contrast, whilst still viewing the role as problematic, other writers have specified responsibilities and roles of researchers. As previously mentioned, the initiation and planning of research within teacher–researcher research partnerships typically falls into the purview of academic researchers (Corden, 2002; Goodnough, 2004), as do associated responsibilities such as ongoing project management, budgeting, monitoring and resourcing. Arguably, this situation

could be the result of researcher experience, expertise, and available resources, or more simply it could arise from the "often casual presumption that academic researchers can decide to enact 'partnership' or 'collaborative' work" (Frankham & Howes, 2006, p. 620). Whatever the cause, and as previously noted, researcher control of the initiation and design of research can be argued to serve to maintain the status quo in respect to researcher status and power (Cousins & Simon, 1996).

Another way that the role of academic researcher is seen as overplaying the researcher's importance is through its emphasis on techniques of facilitation. Kemmis and McTaggart (2005) see that the role of academic researcher is primarily and specifically concerned with facilitation and they regard this as being somewhat paradoxical and problematic, in that it can "implicitly differentiate … the work of theoreticians and practitioners, academics and workers" (Kemmis & Mc Taggart, 2005, p. 569). Influenced by Habermas (1996), Kemmis and McTaggart have come to understand research partnerships as open and inclusive networks where the facilitator can be a "contributing co-participant, albeit with particular knowledge or expertise that can be helpful to the group" (p. 595) and where all members of the partnership can take a facilitator role. This understanding is echoed by teachers in Oliver's (2005) study who saw that guidance and mentoring from the researchers helped the development of strong partnerships where members were equal but took different roles at different times.

Some writers (for example, Graham, 1998; Greenwood et al., 2003; Saunders, 2004) argue that a central part of the researcher's role is that of modelling and providing guidance on researcher positioning and research practices and of supporting school-based research with scholarly expertise and methodological protocols. On the other hand, Frankham and Howes's (2006) experience suggests that expertise and protocols were the "least important elements of what university researchers brought to the table" (pp. 619–620). Frankham and Howes argue that it was by working in and through relationships that they, as researchers, began to play a part in developments in the school. They promote an ethnographic-type engagement by researchers in settings so that, over time, teachers change from seeing the researcher as "wanting" something from the school to viewing them as nonthreatening co-conspirators and, consequently, researchers attain insider status at schools.

Clearly then, the adoption of a nonevaluative stance (Cole & Knowles, 1993; Stipek, Ryan, & Alarcon, 2001) is central to the positioning of academic researchers within collaborative research partnerships. The current study for example, adopted the vision of role of researcher as conceptualised by Groundwater-Smith and Dadds (2004, p. 242, cited in Oliver, 2005, p. 5) as "work[ing] with teachers rather than on teachers".

Researchers work with teachers in various ways through collaborative research partnerships. In addition to utilising the previously mentioned processes of facilitation, modelling, and mentoring, research groups support teachers to learn about research and research methods through reading and discussing professional readings; examining research projects completed by other teachers;

evaluating and analysing data to make links between data and theory; and designing data collection tools (Corden, 2002; Goodnough, 2004; Graham, 1998).

## Research frameworks and methodologies

Action research frameworks are "perhaps the best illustration[s] of how teachers are participating in and initiating alternative models of inquiry that involve them in the interpretation and representation of their own experiences" (Cole & Knowles, 1993, p. 477). Certainly, action research has been hugely influential in the area of teacher research and teacher–researcher research partnerships, and a great deal of the research and practice in the field has been generated in the context of action research (Corden, 2002; Frankham & Howes, 2006; Goodnough, 2004; Kemmis & McTaggart, 2005; Oliver, 2005).

Teacher action research is broadly located within constructivist and/or interpretive frameworks variously reflecting hermeneutics, phenomenology, and interactionist perspectives (Cole & Knowles, 1993; Oliver, 2005). Although it generally involves systematic inquiry into practice through cycles of planning, acting, observing, and reflecting, a number of writers agree that there is no specific blueprint for the process of action research or, as Frankham and Howes (2006, p. 628) put it, action research has to be "reinvented over and over again".

In contrast to conventional research, action research involves inductive inquiry, which yields fuzzy, rather than firm, generalisations from which tentative hypotheses can potentially be formulated to stimulate further action research (Corden, 2002; Goodnough, 2004). Participatory action research (Kemmis & McTaggart, 2005), in particular, is distinguished from conventional research in several ways, most notably that it involves shared ownership of research projects; community-based analysis of social problems; and an orientation toward community action. Participatory action research does not regard either theory or practice as pre-eminent in the relationship between them. It aims to articulate and develop theory and practice in relation to the other by critically reasoning about both of them and their consequences and, in doing so, to transform theory and practice. Participant-researchers "are embarked on a process of transforming themselves as researchers, transforming their research practices and transforming the practice settings of their research" (Kemmis & McTaggart, 2005, p. 575).

Whether they employ action research and/or other methods such as case study (Smith, 2004), collaborative teacher–researcher research partnerships involve a mutual process of practitioner and researcher theory testing using data (Graetz et al., 2004; Robinson & Lai, 2006). Working with data is a primary/central activity of research partnerships (Berger et al., 2005) and the literature from the school professional development movement emphasises cultures of inquiry as sites for evidence-based research (Frey, 2002; Snow-Gerono, 2005).

Like most aspects of teacher–researcher research partnerships, working with data within cultures of inquiry is complex. Merely ensuring that teachers are provided with enough high-quality opportunities to learn the skills required to collect, interpret, and use evidence about the link

between their teaching and their students' learning is difficult (Robinson, 2003). Furthermore, there are inherent tensions in developing a culture of inquiry—for example the tension between being critical of colleagues in order to engage in deep professional learning and the simultaneous need for trust and respect—which the research on professional learning communities does not resolve (Robinson & Lai, 2006).

Tensions aside, teacher–researcher research partnerships generally employ multiple methods of data collection to enhance data analysis, interpretation, and corroboration and to build an evidence base. Data is collected from a range of sources including: participant and nonparticipant observation of student and teacher practice and meetings (Frankham & Howes, 2006; Goodnough, 2004; Greenwood et al., 2003); documents such as lesson plans, notes, letters and accounts between head teacher and researcher, and journals (Frankham & Howes, 2006; Goodnough, 2004); semistructured and informal interviews (Goodnough, 2004); teacher, parent, and student questionnaires (Corden, 2002; Frankham & Howes, 2006; Smith, 2004); student achievement data (Greenwood et al., 2003; Stipek et al., 2001); accounts and interventions by researcher-participants (Frankham & Howes, 2006); consultations (Gratez et al., 2004); and student work samples (Corden, 2002).

Data analysis, within teacher–researcher research partnerships, uses a variety of methods such as dialectical analysis and grounded theory and can employ analysis software programs such as SPSS and NUDIST (Bernard, 2002; Goodnough, 2004; Greenwood et al., 2003; Kemmis & McTaggart, 2005).

In conjunction with drawing on data, collaborative teacher–researcher research partnerships draw on theory and research (Goodnough, 2004; Gratez et al., 2004). Central to this are investigations of the theories and assumptions which teachers operate under, and the promotion of dialogue between teacher theories and wider theoretical frameworks (Oliver, 2005; Robinson & Lai, 2006). Robinson and Lai (2006) caution that the use of theory falls short if not coupled with practitioners' critical examination of practice:

> [Critical examination of practice] requires dialogue between teachers' theories of action (…knowledge, beliefs and actions) and external researchers' theoretical frameworks. In such dialogue, practitioners are required to provide and defend their theories of action. They are also required to use published research to heighten their awareness of other perspectives, provide content for reflection, and develop theoretical justifications … this approach is more likely to foster significant and worthwhile improvements to teacher practice than attempts to disseminate academic research and theory to practitioners without also examining practitioner theory. (p. 198)

Not only should collaborative teacher–researcher research partnerships encourage teachers to engage with published research, in order to be truly collaborative and to promote teacher ownership of, in this case, the building of knowledge, they should encourage teacher dissemination of research findings (Berger et al., 2005; Goodnough, 2004; Robinson & Lai, 2006). However, as Oliver (2005, p. 9) notes, findings from teacher research are "rarely disseminated beyond the teacher-researchers to wider staff". Findings from one of the schools in

Berger et al.'s (2005) study perhaps go some way to illuminating the reasons for this. Teacher-researchers in this school did not share their research with wider staff. They reasoned that if the other teachers had "been curious they'd have asked us". Conversely, the teachers who were not involved in the research felt that "if there was something important they were learning … they would tell us about it" (Berger et al., 2005, p. 97).

Although the teacher-researchers in this school did not share their findings with wider staff, they did write papers and speak at conferences. Arguably, this is the exception rather than the rule as is a partnership discussed by Gebhard, Harman, and Seger (2007). Gebhard et al. describe ACCELA—a school–university partnership—as differing from other such partnerships in that participants regularly present their data to colleagues, principals, and district administrators as "a way of collectively reflecting on the implications of their work for teaching, learning and policy making across institutional contexts" (p. 421). Sharing research findings and writing for academic and practitioner audiences is a role that most typically is undertaken by academic researchers (Oliver, 2005) and, as such, it is yet another contested/problematic aspect of teacher–researcher partnerships (Kemmis & McTaggart, 2005), one that is linked to dilemmas associated with representation and voice and with deriving mutual benefit from research (Cole & Knowles, 1993).

Whereas, as previous discussions indicate, the role of academic researcher was conceptualised and problematised in various ways in much of the literature consulted for this review, the role and responsibilities of the teacher were relatively unexplored. With the few notable exceptions already discussed, descriptions of the role of the teacher appeared to be mainly limited to data gathering and analysis and to implementing strategies. The opposite is the case in regard to the outcomes of research partnerships. The impact of research partnerships on teachers was explored in much greater detail than the impact on researchers. This could be attributed to most of the consulted literature being written by academic researchers and, arguably, it suggests that researcher–teacher partnerships are often conceptualised as 'helping relationships'.

## Impacts/outcomes of partnerships

In addition to the impacts on researchers and teachers, outcomes of teacher–researcher research partnerships have been conceptualised in terms of schools and of students. The notion of prespecified outcomes as output is problematised by Frankham and Howes (2006), who affirm the importance of process, not just the effects of process.

This point notwithstanding, impacts on researchers that were identified by the literature were mainly to do with researchers "developing a better understanding of the constraints and opportunities of real educational contexts" (Stipek et al., 2001, p. 144). As one teacher in Oliver's study stated, "I think the most important part of that relationship is the university getting a handle on what the chalk face is" (2005, p. 23). Cousins and Simon (1996, p. 202) did note that researchers also stood to gain intellectual enrichment and revitalisation of their approaches to research, or "new constructs for interpreting phenomena; a more differentiated, reconfigured way

of representing processes underlying a given study or research program; and the reconceptualisation of the approach to the research program".

The impacts on teachers from participation in collaborative teacher–researcher research partnerships are typically framed in terms of teacher knowledge, learning, and practice. As previously discussed, collaboration is considered a powerful professional development tool and one which promotes teacher learning. Although empirical research about how teachers actually learn in collaborative settings has been sparse (Borko, 2004), new frameworks for understanding how teachers question, test, refine, and revise their content knowledge are now beginning to emerge (Davies & Walker, 2005).

A one-year study by Meirink, Meijer, and Verloop (2007) explored the impact on six teachers of their participation in collaborative learning communities. In line with research on teacher learning, Meirink et al. conceptualised learning "as a change in cognition (knowledge, beliefs, attitudes, emotions) that can lead to changes in teaching practice" (2007, p. 147), noting that changes in cognition do not necessarily have to result in changes in behaviour to be labelled learning or vice versa. The impact of teacher participation in collaborative groups was explored in relation to reported changes in cognition and behaviour.

More changes in cognition than changes in behaviour were reported by the teachers in Meirink et al.'s study, who reported only "a small number of practical applications of the methods they had got to know during collaboration with their colleagues" (2007, p. 158). Possible explanations that Meirink et al. put forward were that the methods did not fit in with the work plans the teachers had to follow, the period of the inquiry might have been too short as changes in teacher behaviour require time and effort, or that there may have been issues with the methodology of the study in that self-reports of teachers can result in incomplete information on their changes in behaviour.

Sherin outlines a framework which formulates learning in the act of teaching as occurring as teachers negotiate among "three areas of their content knowledge: their understanding of the subject matter, view of curriculum materials, and knowledge of student learning" (2002, p. 119, cited in Davies & walker, 2005, p. 1). Sherin uses the term *content knowledge complexes* to describe pieces of subject-matter knowledge that are accessed together repeatedly during instruction and become connected. According to Davies and Walker, this process of interconnection is vital:

> If teachers are going to provide students with appropriate … challenges and assist the students to gain meaning, they need to be able to access their own content knowledge whilst engaged in the act of teaching. It is crucial teachers are able to notice the significant … moments and respond appropriately (2005, p. 6).

The development of such attitudes of enquiry towards, and increased awareness of, their teaching can be fostered by collaborative teacher–researcher research partnerships, in that they support teachers to restructure existing understandings and to engage in critical thinking (Corden, 2002; Davies & Walker, 2005; Shulman & Shulman, 2004). Certainly, teacher learning or, as Goodnough (2004) puts it, "teacher knowing"' is an inherent part of teacher research and learning

(Oliver, 2005) and there is "plenty of evidence that suggests that engaging with and in research re-energises teachers" (Saunders, 2004, p. 164) and results in improved knowledge and practice of teaching (Corden, 2002).

Involvement in research partnerships can also develop teachers' knowledge of research, their conception of self as researcher and their sense of agency as researcher (Oliver, 2005). For example, one teacher in Graham's study discussed how her experience had allowed her to reconceptualise how she viewed research:

> One of the biggest ways I have grown is in understanding how simple it can be to do research. I always thought that for research to be worthwhile I had to have control groups, as well as experimental groups, great statistical numbers and formulas, etc. The simple research done showed me that I had been doing research for years and it was and is worthwhile. All of this made me feel more like a professional who is constantly searching for answers and growing in my job. (Graham, 1998, Mentor Teacher Experiences with Research Partners section, para. 2)

A sobering point is noted by Boles et al. (1999, cited in Berger et al., 2005) who, in an investigation of the potential for teacher research to transform individual teaching practice and to create cultures of inquiry in schools, found that whilst teacher research was transformative for the teachers involved, it had no impact on the cultures of the schools they taught in: "the learning that was taking place inside the teacher research groups was either benignly ignored or actively rejected by the other teachers in the building" (p. 94).

Transfer of teacher learning is, likewise, an issue in relation to TLRI. Specifically, the question is whether the learning transfers to teachers' future classroom practice, to other teachers in the school, and across contexts (for example. other subjects, students) (oliver, 2005). Learners' characteristics, training delivery and design, and organisational climate all impact on transfer of teacher learning. In order for research to have impact beyond the immediate classroom it needs to be embedded within the overall school culture, and the school needs to plan for specific ways to use and embed the knowledge in order for it to be useful (Oliver, 2005).

The impacts on students of their teachers' involvement in research partnerships over the periods of research have been documented as including affective outcomes (Corden, 2002; Frankham & Howes, 2006) and improvements in student practice and achievement (Goodnough, 2004; Greenwood et al., 2003; Lacina, 2006; Saunders, 2004; Stipek et al., 2001). As emphasised by Corden (2002) a whole-school policy and a consistent teaching approach appear to be crucial in maintaining and developing any gains in student achievement.

Within the literature consulted for this review the knowledge-generation outcomes of teacher–researcher partnerships were unclear, and projects that were directly concerned with evaluating teacher–researcher research partnerships appeared to be scarce. As Cousins and Simon noted "data remain thin, and many questions need to be answered" (1996, pp. 199–200). Cousins and Simon's study was one which did focus on the effects of partnerships between researchers and practitioners. Their approach to their participatory evaluation study on policy-induced

partnerships was grounded in the principles of social learning theory (i.e., knowledge is socially constructed and shared meaning will develop through processes of social interaction or processing). Cousins and Simon adopted case-study methodology and employed triangulation strategies reliant on mixed methods and multiple data sources (survey questionnaires, formal and informal semistructured 1:1 and group interviews, nonparticipant observations, indepth case profiles).

## Conclusion

Whilst there are inherent tensions in the relationships between teachers and researchers, and aspects of these relationships are complex and problematic, the literature does identify a range of conditions that are critical to the success of teacher–researcher research partnerships.

For example, and to a somewhat surprising extent, leadership support was found to be vital to teacher research. To be successful, especially in the long-term, research partnerships need to be supported by research-driven school cultures which have supportive management teams and a long-term commitment to research projects.

Collaboration, in particular, is viewed as being fundamental to partnerships and distinct from co-operation in that collaborative research partnerships accord equal status to all partners, and are typically underpinned by common values, beliefs, and goals. Ideally, collaborative research partnerships are open, inclusive networks where research is an integrated and owned part of teachers' experience, and where members, as equals, take different roles at different times.

Many of the tensions, contradictions, and complexities inherent in research partnerships arise from, or are intertwined in some way with, notions of collaboration. Resolution of, or at the very least strengthening of partnerships' abilities to deal with, complexities and conflicts may require a major shift in conceptions and cultures of research. As noted by Saunders:

> Essentially, don't we need to be shifting the research culture from 'transmission'—researchers disseminating their outputs—to 'transformation'—professionals seeking, sharing and creating knowledge and understanding from research informed practice? This is the way to strengthen the 'connective tissue' between teaching and research (2004, p. 166).

# 2. Aims, objectives, and research questions

This project aimed to identify a variety of literacy-teaching approaches that could be used in secondary content-area classrooms to improve the achievement of a wide range of students. Specifically, the project aimed to investigate:

- literacy and the extent to which a focus on improved teacher knowledge and practice would lead to increases in student achievement
- the extent to which research partnerships constituted effective forms of both professional learning and research.

The project set the following objectives in order to achieve the aims described above:

- to deepen understanding of the literacy challenges that students face in the various content areas in order to inform assessment, professional practice, professional development, and the preparation of teachers and to provide future direction for research in secondary classrooms
- to identify, develop, and research the efficacy of a range of pedagogical approaches that could fit within the constraints of the secondary classroom
- to develop the relationship between teachers and researchers in order that research into secondary literacy education is better grounded in the context of the classroom and on the needs of students and teachers
- to support involved teachers to become familiar with the complexities of classroom-based research as a means for the development of their own practice
- to identify and describe the impact of the research partnership as a tool for professional learning.

To these ends, the following research questions guided the project:

- to what extent would a focus on improving literacy teaching practice lead to increased student achievement?
- To what extent would research partnerships support the professional learning needs of teachers in relation to advancing student knowledge and skills to meet content-area literacy challenges and assessment demands?
- what elements of current pedagogical practice positively impact on student achievement?
- how could research partnerships enhance our understanding of a range of practices that would positively affect the learning outcomes of a wider range of students?
- which teaching approaches lead to long-term changes in student literacy behaviours?

In order to achieve these outcomes, the data-collection tools outlined in Table 1 have been used. These tools are described in more detail in the next section.

Table 1 **Data-collection methods used to explore individual outcomes/research questions**

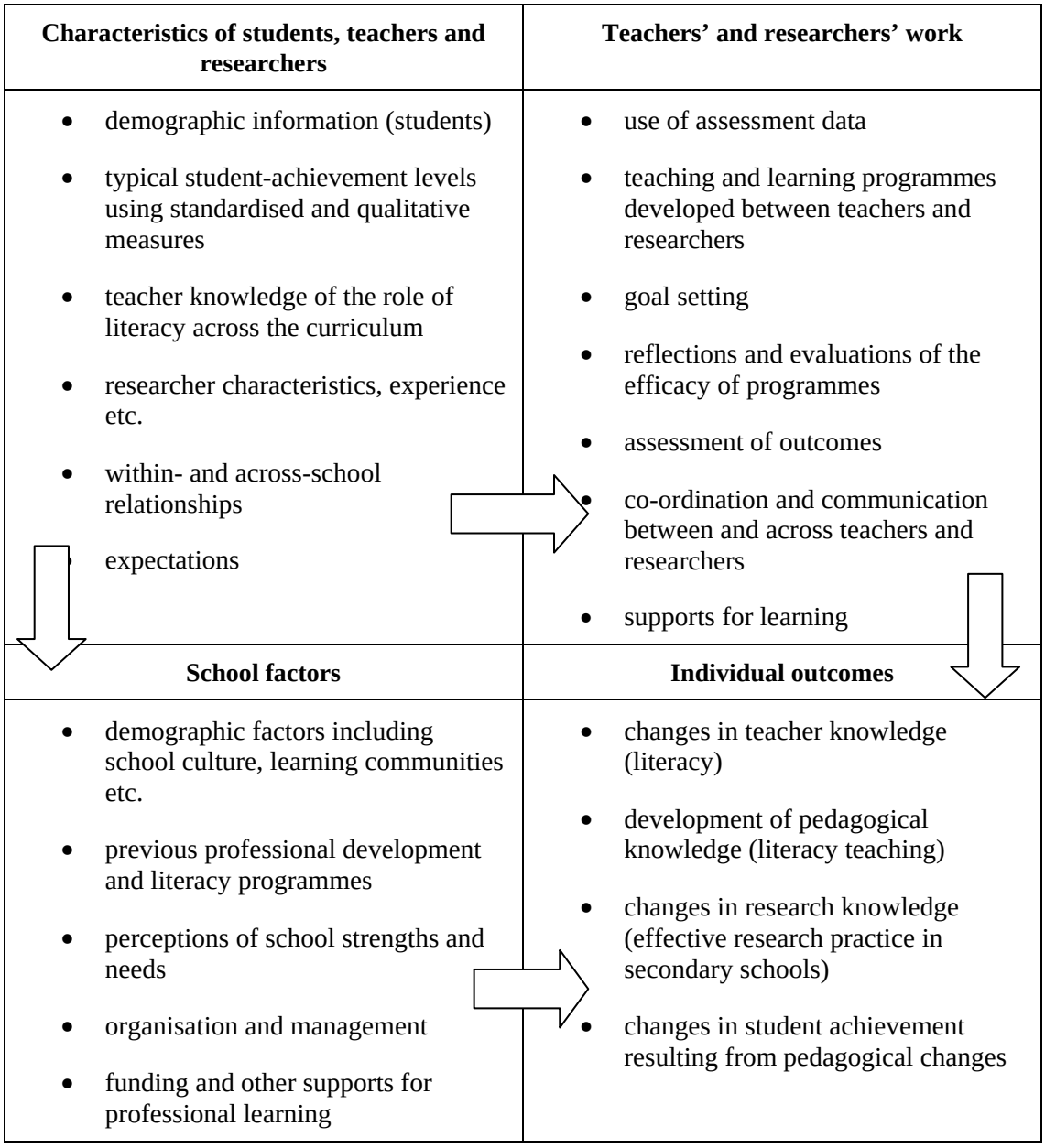
| Outcome | Data collection method | | | | |
|---|---|---|---|---|---|
| | **Interview** | **Concept map** | **Student focus group** | **Observation/ journal entry** | **Student assessment** |
| Development of teacher knowledge | X | X | | X | |
| Development of teacher pedagogical knowledge | X | X | | X | |
| Increased student achievement | | | X | X | X |
| Utility of partnership approach as effective PD/research approach | X | X | | | |

# 3. Research design and methodologies

Given the complexity and interrelatedness of the issues affecting change in student achievement resulting from teacher–researcher partnerships, a multimethod design and model of analysis (Denzin & Lincoln, 2005) is required for the evaluation of the efficacy of this project. In this case, and as suggested by Miller and Crabtree (2005), a range of research methods are essential, as are multiple ways of triangulating the data and multiple stakeholders in the form of researchers, teacher-researchers, other teachers, and students.

For the purposes of this study, a four-component design was developed at the outset of the projects to guide the development of data-collection tools and the analysis of data collected. This included the description of the characteristics of the participants (students, teachers, researchers) of the project as the *independent* variables (Miller & Crabtree, 2005); description of the core services of each provider (teachers, researchers) and the context (schools) in which services are provided as the *intervening* set of variables (Hammond, 1973, cited in Guskey, 2000; Schalock, 1995); and the identification of outcomes (teacher/researcher knowledge, student achievement) as the *dependent* variable set Miller & Crabtree, 2005). As shown in Figure 1, the effect on each set of variables from the preceding can be described in a linear fashion and is essential to an understanding of the effect of interventions in an individual setting. In the final analysis, the articulation of the links between each set of variables is central to any claim as to the "certainty" and "generalisability" (Schalock, 1995) of the research processes and findings as having applicability to other settings and as tools for change.

Figure 1 **Multimethod design and model of analysis**




[1] For purposes of our discussion we have differentiated between teacher knowledge and pedagogical knowledge. For our purposes, teacher knowledge refers to the familiarity teachers have with the literature on adolescent literacy, with the challenges facing their students in this area, and with the origin of those challenges ,whereas pedagogical knowledge relates to the ways in which teachers can work with students to raise their literacy achievements.

## Data collection

The model outlined above required that, alongside the identification of the desired outcomes of the project, understandings be developed of the characteristics of the participants in the project, their various roles, and the contexts within which they work (including the research partnerships) (Hammond, 1973, cited in Guskey, 2000; Schalock, 1995). Consequently, data collection focused on those sources which would provide descriptions of the participants and contexts; facilitate the analysis of the core services of the providers; and assist the identification of outcomes (teacher, researcher, and students).

During the design phase for the TLRI projects, discussions took place between the researchers, school management, and teacher-researchers to develop the approach to the literacy investigations to be undertaken. In each instance (discussed in more detail in the findings section) the theoretical base for the investigations was the "scope and sequence" of literacy skills (McDonald & Thornley, 2005). In each school, however, the way in which the efficacy of this tool could be used to increase teacher knowledge and understandings and to raise student achievement evolved as a result of the particular circumstances and aspirations of the school and teacher-researchers. In general the three schools and the projects in them could be described as shown in Table 2.

Table 2 **School Characteristics and Projects**

| | School characteristics | | | |
|---|---|---|---|---|
| | **Students** | **Decile** | **Size** | **Location** |
| School A1 | 70% Pasifika, 20% Mäori | 2—integrated school | 300 students | Urban, South Auckland |
| Project description | All Year 9, 10, and 11 students over the two years were included in the research cohort. Initially there were two teacher-researchers, who were joined by a third teacher-researcher in year one. Although intended to focus on science and English, the teacher-researcher in science moved to a full-time Bible studies position. As a result of this and the introduction of a literacy option class for Year 9 students in year two, the project focused on developing relevant teaching approaches to enable students to better access text in Bible studies, literacy option classes and English classes. | | | |
| School B | 80% Päkehä, 15% Mäori | 5—state area school | 150 students | Rural, Central Otago |
| Project description | All Year 9, 10, and 11 students over the two years were included in the research cohort. While the project was run by three principal teacher-researchers, a whole-staff model of professional development was used to describe teaching approaches and to trial and measure progress across the curriculum. | | | |
| School C | 85% Päkehä, girls school | 6—state single-sex school | 450 students | Rural, north Otago |
| Project description | In the first year one low-stream class of Year 9 students, and one broad band of Year 10 students, and in the second year two Year 11 classes were included in the research cohort. These were all English classes. There were two teacher-researchers in the first year, who were joined by technology and physical education heads of department in the second year. Both new teacher-researchers taught numbers of students in Year 11 cohorts. The project focused on developing a range of teaching approaches to raise achievement of a range of students and, in the second year, to develop consistent literacy teaching approaches across English, physical education, and technology. | | | |

The principal researchers had established relationships with the three schools. Schools Two and Three had been involved in a longitudinal study with the principal researchers in which a cohort of their students had been tracked through their high school careers. The teacher-researchers in each school had also engaged with the principal researchers on developing teaching approaches arising from the longitudinal research study findings. School A had also been involved with the principal researchers through an evaluation study, and the teacher-researchers there had expressed interest in applying research findings to their largely Pasifika student body. Although not a purposive sample, the diversity of student experiences, the location of the schools, their characteristics and their willingness to be involved made for a useful study cohort.

In order to contribute to the methodological rigour (Patton, 1990) of the study; to address the complex issues (Harry, Sturges, & Klinger, 2005) involved in literacy teaching and learning in the secondary school (Bryant et al., 1999) and in teacher–researcher research partnerships; and to enhance the study's validity (Stake, 2000) a range of data-collection techniques (qualitative and quantitative) were used. Data sources included concept maps, teacher and principal interviews, observations of classroom practice, documents, student interviews/focus groups, student assessments, teacher journals, and researcher field notes.

## Concept maps

Markham, Mintzes, and Jones (1994) used concept maps in their science education programme assessments as indicators of participants' conceptual knowledge and understanding in relation to a given phenomenon. The researchers argued that the maps provided a site for individual participants to demonstrate the structural complexity of their knowledge about a topic and their precision in conceptualising relationships between elements of that topic. Researchers undertaking qualitative evaluations of professional development programmes in New Zealand and Australia have also used concept maps to show changes in teachers' understandings and knowledge (Bobis, 1999; Higgins, 2001; Thomas & Ward, 2001).

Concept maps were used to access teacher-researcher beliefs and to examine the extent to which teacher knowledge was restructured over time (Higgins, 2001). The teacher-researchers all participated in concept-mapping sessions with the researchers at three points during the project: the outset of the project, the beginning of the second year, and the end of the project. During these sessions links were made, and conflicts identified, between the perceived skills and needs of students, the context of their schools, and the content and literacy teaching and learning demands of the curriculum.

## Interviews

All teacher participants completed interviews at the end of Year I and II that focused on their literacy knowledge, professional learning, and the value of teacher–researcher partnerships.

Senior managers in participating schools were also interviewed in order to ascertain their perceptions of the development and progress of the TLRI partnership's work in their schools.

The interviews were semistructured in that the researchers had a predetermined set of questions, or interview schedule (see Appendices A and B). However, the style of the questions was open-ended, allowing for responsiveness to the lead of the interviewee and for some latitude in the breadth of relevance (Freebody, 2003; Harry et al., 2005).

The interviews were recorded using digital recorders and they were fully transcribed. Copies of the transcriptions were returned to the interview participants for verification and/or amendment. The recordings were only available to the research team and the transcriptions were altered to remove any identifying information.

## Observations

During the course of the project, the researchers completed a number of classroom observations of the teaching practice of participating teachers using a running record approach in which the researchers described the activities and scripted relevant comments and discussion points. Given the regular visits made by the principal researchers to participating schools, observations took place at least four times annually and were often undertaken over a number of days.

The observations provided a basis for discussions between the researchers and the participating teachers and informed the ongoing professional development and research work. These observations provided important records of teacher change when reviewed over time.

## Documentation

- Meeting minutes

The research partnership held biannual meetings where participants reviewed the literature on literacy, professional learning research, and the progress of the project. At these times they also analysed student work and made decisions about teaching and learning goals for the future. The minutes taken at these meetings, together with notes and audio recordings of presentations and discussions, form a long-term diary of the cycle of thinking, reflection, and planning enacted through the meetings.

- Teacher journals

Each participating teacher also kept a journal of their thoughts; questions; findings and their developing understandings about literacy, teaching, and their students. Journals became important reflective tools for teacher-researchers, and they were used extensively in meeting and interviews with the principal researchers. At two schools teacher-researchers also kept regular logs of the quantity and nature of reading and writing tasks they asked of their students.

- Researcher field notes

During the visits to schools and meetings held, the researchers kept detailed notes of findings, reflections, and the discussion points arising.

- Teaching plans

On numbers of occasions the principal researchers taught for teacher-researchers and teacher-researchers have taught for their colleagues. The plans developed for each of these instances, along with the regular planning of lessons and units of study undertaken by teachers, are a record of changed practices.

## Student data

- Assessments

Each school/teacher identified target groups of students as described in Table 2. The collection and analysis of assessments and work samples from these groups provided data which served formative and summative needs.

In each of the three schools, target students completed curriculum-based literacy assessments (Education Associates Content Area Literacy Assessments, abbreviated here to EdAssoc) which were designed to identify literacy skills and needs aligning to the scope and sequence of literacy skills (McDonald & Thornley, 2005, see Section 4 for a description). These assessments formed the baseline information from which the teaching approaches trialled in the project developed. Table 3 shows when these assessments were completed, along with the numbers of students participating. Although the total number of students who participated in the assessment are shown, only the results from students who completed more than one assessment were used in the analysis.

In addition to these assessments, and as a means of measuring change in student achievement over time, students completed asTTle reading assessments at the beginning and end of each school year.

Table 3 **Student data collection**

| | Data Collection Points | | | |
|---|---|---|---|---|
| | **February 2006** | **October 2006** | **February 2007** | **October 2007** |
| School A: EdAssoc | Year 9, N=50<br>Year 10, N=52<br>Year 11, N=0 | | Year 9, N=41<br>Year 10, N=53<br>Year 11, N=25 | Year 9, N=41<br>Year 10, N=49<br>Year 11, N=32 |
| School A:<br>asTTle | Year 9, N=34<br>Year 10, N=21<br>Year 11, N=16 | Year 9, N=34<br>Year 10, N=21<br>Year 11, N=16 | Year 9, N=44<br>Year 10, N=34<br>Year 11, N=21 | Year 9, N=44<br>Year 10, N=34<br>Year 11, N=21 |
| School B: EdAssoc | Year 9, N=14<br>Year 10, N=12<br>Year 11, N=6 | | Year 9, N=15<br>Year 10, N=14<br>Year 11, N=13 | Year 9, N=15<br>Year 10, N=14<br>Year 11, N=13 |
| School B: asTTle | Year 9, N=13<br>Year 10, N=12<br>Year 11, N=5 | Year 9, N=13<br>Year 10, N=12<br>Year 11, N=5 | Year 9, N=14<br>Year 10, N=13<br>Year 11, N=12 | Year 9, N=14<br>Year 10, N=13<br>Year 11, N=12 |
| School C: EdAssoc | Year 9, N=16<br>Year 10, N=30<br>Year 11, N=21 | | Year 9, N=21<br>Year 10, N=22<br>Year 11, N=24 | Year 9, N=16<br>Year 10, N=18<br>Year 11, N=0 |
| School C: asTTle | Year 9, N=14<br>Year 10, N=19<br>Year 11, N=8 | Year 9, N=14<br>Year 10, N=19<br>Year 11, N=8 | Year 9, N=17<br>Year 10, N=14<br>Year 11, N=11 | Year 9, N=17<br>Year 10, N=14<br>Year 11, N=19 |

Note: Year 9 students from 2006 become the Year 10 group in 2007; similarly, Year 10, 2006 become Year 11, 2007.

- Student voice

In each of the target classes, focus groups of students were convened to discuss their perceptions of their literacy challenges along with the approaches to teaching which they felt supported their learning. These meetings were held on an annual basis. At School C students were also surveyed regularly about their literacy learning.

## Ethical approval

Ethical approval for the longitudinal research study which provided the foundation for the current study was provided by the University of Otago Ethics Committee in 2003. Given the close relationship between the earlier and this current study, procedures were reviewed and extended to cover School A (school-wide approval, staff participation, student participation) and the data collection tools. This review was undertaken by Dr Martin Tollich of the University of Otago in

his capacity and under his authority as chairperson of the Ministry of Health's multiregion ethics committee.

Given the previous involvement with the schools by the principal researchers, schools were approached for their interest in participating in the current study at the time the initial proposal was developed for the TLRI project, and an expression of interest was signed by them detailing the various obligations and expectations involvement in the projects dictated. At this time, potential teacher-researchers were identified and expressions of interest were sought from them.

Once we were informed of the success of our application, schools and teachers were provided with the approved ethics information sheets and consent forms. Given the nature of the data to be collected and the fact that students would, by and large, continue to participate in the general activity of their daily school lives, information sheets were provided to parents and to students and parents were asked to contact the school if they did not wish data to be collected for the research from their children. No parent took this option. Students were also informed each time a researcher was present in the classroom as to the nature of our activities, and they were free to choose to participate or not in any focus group or survey.

## Data analysis

Data from different sources were examined for evidence of the key outcome measures described earlier (increased teacher literacy knowledge, increased pedagogical knowledge and practice, student gains, and the efficacy of the approach) using Charmaz's (2000) constant comparative approach in which

> data collecting may demand that researchers ask questions and follow hunches, if not in direct conversation with respondents, then in the observer's notes about what to look for … (so that) we researchers will see the basic social process in the field through our respondents' telling what is significant. (p. 514)

This approach constrained both data collection and analysis in a number of ways. In relation to student focus groups, constraints included the need to focus closely on the actual reading and writing behaviours students could identify and discuss as important to them in the context of their work in secondary school. Similarly, and in respect of concept maps, analysis focused on the identification of concepts and understandings in relation to literacy teaching and learning, pedagogical knowledge, the experience of research-driven professional development, and notions of partnership.

Further, Donmoyer (cited in Eisner & Peshkin, 1990) suggests that within qualitative studies such as this (which, along with the development of research partnerships, seeks to develop and *evaluate* the efficacy of a range of teaching approaches in a range of settings and situations) there is a need to be concerned with the extent to which one set of findings can be seen as fair, thorough, ethically appropriate, and, ultimately, applicable to other settings. He refers to Lincoln

& Guba (1985), who use the term *transferability* and refers to the fittingness or congruence between settings and that this must be reassessed in any setting in which transfer is to be advocated. It would be our contention therefore, that given the project's existence across three sites and using the constant comparative approach and a relatively constrained set of questions or themes, it will be possible to generate findings that can be readily applied to other settings and situations.

Interestingly, however, as data was analysed across the three schools, a number of differences in the project as enacted in School B became apparent. Thus, as data was analysed, commonalities and differences across the schools in relation to teacher knowledge and practice emerged, and while it had not been our intention to contrast schools' achievements, it seemed increasingly relevant to do so insofar as shifts in student achievement were concerned.

# 4. Findings

This section is organised in three major parts. In the first part, the tools used, the processes for change and the significant events underpinning those changes are discussed. The second part describes the changes that occurred as the research partnerships developed, and the final part discusses the new literacy and pedagogical knowledge generated over the course of the projects. Part three also describes the results of student assessments and the extent to which any changes can be attributed to the project.

## Foundations for change

### Tools

Although there were variations in the projects in each school, the focus of investigation in all three was the scope and sequence chart (McDonald & Thornley, 2005). This tool was developed as a result of

- reviews of recent research indicating the importance of readers understanding the extent to which differences in the multiple genres of expository and narrative texts affect how such texts are read and what information can be read from them (Dean & Grierson, 2005)
- an analysis of the task demands inherent in a number of NCEA tasks which revealed that students not only needed to be proficient at locating, evaluating, and extracting information from a wide range of sources and stimulus material, but that they had to be competent at bringing seemingly disparate pieces of that information together for means of explanation, justification, analysis, and comparison and that, in order to go beyond "achieved" at level one, students would struggle without access to the more complex skills required to explain, analyse, compare, or evaluate
- comparison of NCEA tasks with the literacy skills assessed at year eight on the NEMP *Reading and Speaking 2000* tasks (Flockton & Crooks, 2001), *Information Skills 2001*(Flockton & Crooks, 2002*), Graphs, Maps and Tables 1999* (Crooks & Flockton, 2000) in order to provide a baseline set of skills for secondary entry and for students to have acquired for success at year 11 and NCEA;
- The addition to the above work of the findings of an initial study into the literacy skills and strategies of successful and struggling students in Years 10 to 13 (see Thornley & McDonald, 2002) and the results of the first stage of a larger study tracking secondary students literacy

skills development through the secondary years (see McDonald & Thornley, 2004; McDonald & Thornley, 2005).

The organisation of the scope and sequence Figure 2, is premised on points arising from the research findings noted above. In the first instance, students who described themselves as successful readers often used the surface features in a text prior to reading for deeper understanding and, secondly, these activities occurred prior to a focus on solving unknown vocabulary. These readers also adopted different approaches to their reading depending on their familiarity with the content and form of the reading they had to undertake and in relation to the demands of the task they were completing.

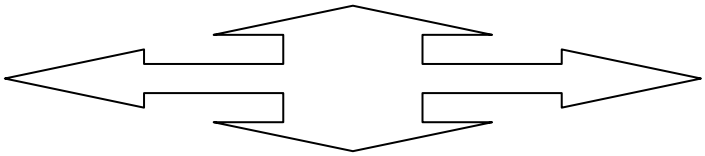
A vertical reading of Figure 2 indicates that when approaching unfamiliar texts, a student needs to know how to use the immediately available information from headings, illustrations, tables, and diagrams in order to build a content base to support reading of the running text. Similarly, if the student knows something of the text form then they will have some ideas about where to locate information and how it will be presented. The experience of successful readers also indicated that a review of the information and the location of that information was an essential component in reading more deeply in order to locate important ideas, and for bringing literal and inferred information from various sources in and across texts together. Not surprisingly these readers were also well placed to solve word problems as they arose.

A horizontal reading show skills grouped in stages to represent the ways in which they build on each other over time. The point being that a student needs to know how to locate information in the surface features of a text before they can use such information to check their understandings, and before they can use different methods of organising information for the purpose of thinking critically about new ideas. Similarly, the skill of locating literal pieces of information and making inferences in single texts is an important precursor to the more complex task of locating information in multiple texts, or to beginning the processes of synthesis, analysis, comparison, or explanation. On the basis of the work undertaken (McDonald & Thornley, 2005; Thornley & McDonald, 2002) it is therefore suggested that the literacy competencies necessary for success in NCEA Level 1and beyond arise out of the development of skills in the use of the different elements of different text forms for the purposes of finding, understanding, manipulating, and reconceptualising information in relation to the different task demands of different curriculum areas. However, it is important to note that it is not the authors' intention to suggest that students be expected to master each stage of the scope and sequence chart before proceeding to the next. In the interests of purposeful activity and increasing mastery of skills, students should practise the skills described in the act of finding information for the completion of tasks requiring higher level skills. What this suggests is that change over time is measured in the abilities of students to undertake more complex tasks with a wider variety and greater number of more complex texts.

Figure 2 **Scope and sequence chart: Literacy strategies and knowledge across the secondary school curriculum**

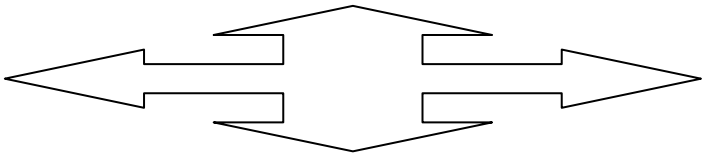
**Using surface features of the text**

| At Stage One students will need to be able to: | At Stage Two students will need to be able to: | At Stage Three students will need to be able to: |
|---|---|---|
| • use their knowledge of text forms to make predictions about the type of information they will read<br>• use text and language features to build understanding of content prior to reading in extended text | • use text features to cross-check information from running text and to extend understanding<br>• make informed decisions about and use a variety of text forms to convey specific information for a range of purposes | • make decisions about appropriate text forms in writing<br>• use text features for gathering and organising information<br>• use text features in their writing as tools for conceptualising and thinking critically |



**Reading for deeper understanding**

| | | |
|---|---|---|
| • make meaning using prior knowledge from text features<br>• develop their understanding of main idea etc.<br>• gather literal and inferred information from single sources of information | • make meaning using supporting and supplementary information<br>• gather literal and inferred information from multiple sources of information | • synthesise, analyse, evaluate and explain phenomena using literal and inferred information from multiple sources<br>• use a variety of text forms and features to explain and rationalise opinion, argument and explanation |



**Building vocabulary knowledge**

- make meaning in unfamiliar vocabulary using context cues (in and beyond the sentence)
- make meaning in unfamiliar vocabulary using context, grammar, and morphemic knowledge
- make meaning and respond to process vocabulary, e.g. *explain, define, describe*

## Processes

The processes described here that were developed in pursuit of the new knowledge and understandings the projects generated were not established at the outset of the projects as we intended to investigate both the process and efficacy of research partnerships as tools for

professional learning and the extent to which the tools (scope and sequence chart) could be used to assist in raising student achievement. There were a number of issues that we had to pay careful attention to in order to get to.

In the first instance, it was essential to build a research culture through the examination of a set of understandings about what research in a school context is and how it may be played out. Concurrent with this development, a shared set of understandings about adolescent literacy in a school context also had to be established. In our case, we also were concerned to ensure that as principal researchers we didn't "own" the projects, and so it was also important to focus from the outset of the projects on identifying the ways we could support our colleagues to become independent as researchers, literacy experts, and resources in their schools. In the following pages, the processes undertaken to achieve these ends are discussed in more detail.

*Building a research culture:* The literature discussing research partnerships between teachers and researchers points to challenges and tensions that are inherent in creating and managing partnerships that produce research findings and which concurrently offer professional learning opportunities for the teachers and their research partners. From the beginning of the project all of the participant members were concerned to ensure the establishment and maintenance of effective research partnerships that fostered professional learning to support the project goals. For these reasons, it was considered important to define *research* and to understand the concept of partnership as they applied to the various contexts of this project.

At our first meeting—and this was revisited on a number of occasions during the project—the partnership members collectively identified the elements that they believed characterised effective research practice. In the opinion of the partnership members, the greater the extent to which we could undertake these tasks in the contexts of teaching and learning in the three schools, the closer we would be to conducting research. The points listed below were those over which some agreement was reached. Research constituted:

- identification of a focus for inquiry in relation to each school and overall
- systematic gathering, recording, analysing, and theorising of data from a range of sources
- making connections with other bodies of research and theory
- creation and dissemination of knowledge and findings as a result of the research.

Throughout the project, however, it was acknowledged that the primary responsibility of the teachers lay with their classes and that not all of the research activities closely resembled the current components of their classroom work. While the identification of a focus for inquiry was relatively achievable in that each school had identified in their initial proposal what their goals were, challenges continued to exist in the extent to which teacher-researchers could regularly interact with research or disseminate their new knowledge.

*Building literacy knowledge:* At the outset of the research partnerships—and arising from previous professional development—numbers of the teacher-researchers identified the need for literacy support for their students, but also said that they lacked the theoretical base to undertake

quality teaching. In a number of instances a lack of knowledge about adolescent literacy led to inaction in terms of teaching or to a level of anxiety about the relevance of what was happening in the classroom. One teacher-researcher noted:

> I know we struggled for ages thinking, yeah, we kept saying, literacy should be part of your lesson but what does that mean? … I never felt I had a grasp, I knew what I could do in the classroom in a mechanical type of way but I couldn't see how it was fitting in to the big picture …

In order to provide a platform from which current literacy practices could be analysed and to begin the development of a set of shared understandings, the researchers and teacher-researchers reviewed the scope and sequence of literacy skills and read and discussed a literature search on adolescent literacy that had been prepared by the principal researchers. This approach had the effect of both assisting in building teacher-researcher knowledge of adolescent literacy and of how literacy demands are different in secondary school from those in primary school, and building pedagogical knowledge in relation to actual teaching.

*Contextualising literacy knowledge:* Across all sites the teacher-researchers and researchers continued to review the research and to develop and trial a number of teaching approaches arising from the application of the scope and sequence chart and the literature. In general the teaching approaches identified focused around the ways in which teacher-researchers might be able to orient their instruction to build students' metacognitive knowledge such that they would be in a position to transfer their knowledge of reading to other texts and contexts. It became apparent, however, that many teacher-researchers and teachers had difficulty in establishing links between the various skills on the scope and sequence chart and the issues raised in the research with the demands of the curriculum. Given this situation, numbers of the pedagogical discussions taking place during the projects had to be preceded by an analysis and discussion of the literacy challenges existing in different curriculum areas. NCEA was frequently used as a benchmark in order to achieve this. A combined analysis of NCEA achievement standards in three content areas revealed the following in School B:

Table 4 **Analysis of NCEA Achievement standards**

| | Science | English | Physical education |
|---|---|---|---|
| Achieved | Define key meanings<br>Describe, list features, facts, and details | L1: Define, identify<br>L2: Analyse features, (describe) | Apply knowledge, describe a process |
| Merit | Explain, define, describe with supporting information | L1: Explain what and how<br>L2: Discuss | Apply detailed knowledge<br>Describe and explain a process<br>Explain with evidence<br>Evaluate effectiveness |
| Excellence | Discuss, compare/contrast, relate, justify, analyse, evaluate | L1: Explain the effect of<br>L2: Discuss effects<br>L3: Synthesise and justify | Apply comprehensive knowledge<br>Critically evaluate effectiveness<br>Explain with evidence<br>Compare with other approaches, justify |

Out of these analyses teacher-researchers then identified the ways in which they could teach students to meet the curricular demands they had identified in analysing NCEA tasks and from that, the key pedagogical approaches they could use to support students' learning. In a number of instances in the initial stages this involved the principal researchers in conducting demonstration lessons, undertaking observations and providing feedback and feed forward to teachers.

It is important to note that these activities were different from the many observations and feedback sessions that the teacher-researchers and teachers had experienced previously. In the spirit of collaboration they were nonevaluative and reflected reciprocal power arrangements of teaching and learning. Teachers observed the principal researchers teaching, teachers observed the teacher-researchers teaching, and teacher-researchers and principal researchers observed teachers teaching. One of the positive outcomes of this classroom-based professional development came from the increase in talk about the pedagogical approaches, adolescent literacy, teaching, curriculum demands, and student learning:

> the really positive things is the feedback that you get about what you're doing and it link, and I can see that what we're doing has made a huge difference so that I know now, we were on the right track. I think what the link between us and the researchers has done is, it's probably made me focus my ideas a lot better.

In other instances teacher-researchers worked together to undertake different activities. At School B, where a whole-school approach was taken in the project, staff meetings focused on deepening their own understandings of the challenges their students faced through an analysis of student assessment results, through an audit of the opportunities students had to read and write in

extended text, and through the development of a number of teaching activities designed to remediate their students' difficulties. In each instance teacher-researchers recorded the results their teaching in terms of their own reflections and student performance.

In the case of this school, the learning community involved all of the teachers, whereas the project focused on three and four teachers at Schools One and Three respectively. The teacher-researchers at School B comprised the deputy and assistant principal and one teacher. They had identified literacy as a professional development priority in the school plan, and one of the senior staff members had an ongoing interest in research. It is proffered here that the roles of these teacher-researchers actually held great sway. The ability of these people to make decisions at the systemic level was in contrast to the other teacher-researchers' constant need to advocate for the importance of the project within their schools.

Despite the different levels of involvement in Schools One and Three, opportunities for collaborative learning were created and promoted by the teacher-researchers. In each of these two schools the team grew in the second year to include further teachers either as coresearchers or as colleagues involved in the professional development that the teacher-researchers provided. In each case— although not as overtly as at School B—the principals and the school management teams supported the projects as partnership schools and ensured that the teacher-researchers were able to meet the complex commitments of the project.

*The role of the principal researchers:* Within the learning process described previously, the principal researchers played a key role as experts in terms of knowledge of the existing literature of literacy theory, and in respect of research and professional development. This made for a number of challenges for the overall TLRI project insofar as the line between professional development and research as a partnership was sometimes difficult to maintain.

In their discussions throughout the first year of the project, the principal researchers expressed concern that the teacher-researchers did not seem to be taking on a research role in their schools. Even though numbers of literacy-teaching activities were developed and trialled, and the generic project research data were gathered across the schools, the vast majority of these activities were either instigated by the principal researchers or the whole project team. During the second year, however, the teacher-researchers increasingly initiated research activities to investigate either their own or their colleagues' learning or their literacy teaching in ways that were specific to their own contexts. In talking with the teacher partners about this phenomenon, they felt that it had only become possible to undertake research as they developed a clearer understanding of adolescent literacy theory and practice.

For the duration of the project, the principal researchers' negotiated role signalled a departure from that of facilitation, which is common in some partnerships, as they undertook classroom teaching to gain further insight into both the research goals and to enrich their own knowledge. The reciprocity engendered through the processes of teaching and observing undertaken by the principal researchers and the teacher-researchers fostered a problem-solving dynamic as together they discussed their teaching and the students' learning. In numerous interviews the teacher-

researchers identified the positive outcomes gained through the principal researchers' teaching in their classes:

> Your [principal researchers'] credibility is, is hugely enhanced by you actually sort of adopting that teacher role. You know, that, is where we talk that common language of practice on, on equal terms because you're actually doing it and that's pretty important.
>
> I've been able to see that the theory does apply. I think that that [the application of theory to practice] was probably a big fear of a lot of people in the group, that they didn't exactly voice when they joined it.

While the nature of the collaboration between teacher-researchers and the principal researchers is discussed in more detail later, an essential element of the knowledge-building process was the transfer of responsibility for identifying learning priorities and content to teachers and teacher-researchers.

*Shifting responsibility:* As the projects progressed, it became apparent that in each of the schools a significant level of collaboration amongst the teacher-researchers developed, and it would appear that this was an essential element in the embedding of literacy knowledge and practice in a school. One teacher from School B described the collaborative process as arising out of the recognition that literacy was the responsibility of all teachers and that this had led to the "major philosophical change in the school" and the development of a common set of goals guiding the literacy teaching and learning. A teacher-researcher made the following point. She said:

> …one of the things that we need to be doing and that [lead teacher-researcher] has done, is doing a really good job of, is increasing people's awareness of what the challenges are at each level of the curriculum. He's done a huge job around that because I think that more people further down the school understand what the kids have to do further up the school.

*Sharing the work:* As teacher-researchers became more confident in their roles, they became involved in the provision of professional development for their colleagues. The degree to which this occurred and the actual role of the teacher-researchers varied from school to school, as has already been discussed. In each school, however, the teacher-researchers initially replicated the approach and content of the professional development they had received from the principal researchers. In each instance, and as the projects proceeded, the teacher-researchers increasingly used the student achievement data that they had collected themselves, and they focused the professional development on an analysis of their findings in relation to what they were learning about adolescent literacy.

Over the duration of the project, the data gathered from these tools was analysed and recorded in increasingly complex ways. As the principal researchers modelled the use of research methods at the research professional development workshops, the teacher-researchers increased the depth of analysis by matching data sets against each other to make greater meaning from their findings. The asTTle student data were compared one set to another, then the asTTle data were compared to the EdAssoc diagnostic literacy data, and each of these sets of findings was compared with the teachers' journal notes about the pedagogical approaches they trialled. As the new tools were

developed for data gathering and recording, the teacher-researchers were mindful of the ways in which comparisons could be drawn and recorded. In each case, it was the lead teacher-researcher at each site who managed these processes, but their colleagues were generally fully involved. Teacher-researchers noted:

> The programme has provided us with data that clearly shows the impact of specific literacy teaching. It has played a significant role in helping to make more staff aware that literacy has a place in the secondary classroom.

In addition to the professional development activities described above, teacher-researchers also began sharing their work through the provision of demonstration lessons for their colleagues. As had been the case for the principal researchers' learning, undertaking demonstration lessons for their colleagues assisted the teacher-researchers to deepen their understandings of the literacy pedagogical approaches that were appropriate to students across the secondary school curriculum.

## Significant events

The research findings revealed that aside from the positive effects of collaborative interactions and the importance of teachers' and researchers' knowledge and expertise, there were a range of events that were crucial to the development and enhancement of the research partnership and the learning that it afforded. These were the four TLRI group meetings held at the start and end of each of the two years, and the education research conference that was attended by the team members each year. These events were planned with the expectation that they would foster problem-solving and reflection on adolescent literacy and pedagogical approaches, as well as build the research expertise of the team members. The high attendance of the team members at each of these events reflected the value that each placed on these opportunities. Records and observations illustrated that the teacher-researchers progressively became more active in their contribution to these events, increasingly reflecting the goals of the project.

On reflection, these events differed from many of the previous professional learning opportunities that the teacher-researchers had experienced. It is arguable that without these events, which marked the repositioning of the teachers into a research role, dislodging the teachers' preconceptions towards the partnership would have been more difficult. The focus of the team meetings on research methodology, data gathering, analysis, and interpretation implied that this was central to their participation in the partnership. As one participant described, the attendance of team members at the annual education research conferences signalled to the teacher-researchers that research could provide them with relevant and accessible knowledge:

> Going to the conference where I can hear other people's presentations and take notes and come back and then use it and, you know, that is really, to me, more important because that's, that's our core business, in a sense. That's what we're supposed to be about.

In the first year, the teacher-researchers' comments made at the four-day conference often concerned their views that researchers and teachers had different agendas, different views of

teaching and education, and that as teacher-researchers they would never be taken seriously. Several teachers discussed the overheard comment (made in reference to another partnership) that "You can only take teachers so far".

However, by the time of the conference in the second year, more of the teacher-researchers wished to participate in the presentation of their findings. To this end, all of the team members participated in a two-day workshop to analyse the research findings and read the literature review materials as part of their preparation for the conference presentations. Thirteen of the fourteen team members attended the conference. The clear sentiments of one teacher-researcher were representative of many of the group members: "We don't feel like we are the subjects of research, it [doing research ourselves] is something we are almost comfortable in".

## Research as a collaborative process

Collaborative research processes were gradually developed over the duration of the project. This was apparent from the changes that occurred in the interactions between the teacher-researchers and the principal researchers. It was also evident from the actions of the teacher-researchers as the partnerships evolved to reflect more even arrangements of decision-making and responsibility. At the beginning, despite the participants' shared identification of "problems of practice" and their common aspirations for improved student learning as an outcome of research as professional development, the partnerships between the principal researchers and the teacher-researchers were tenuous. From the principal researchers' perspective, the partnership offered the opportunity for the collective design, implementation, trial, and investigation of pedagogical approaches and literacy content that could positively address the teaching and learning in each of these diverse contexts. Yet one of the greatest obstacles that was encountered from the outset emanated from the perceptions of many of the teachers concerning their partnership with researchers. They believed that researchers would simply provide solutions that they could implement and the researchers would then investigate the effectiveness. As one teacher explained:

> We had identified the research issues and yet I was waiting on [the researchers] to come in with all the answers.

As the project progressed into the second year, there was increasing anxiety amongst the principal researchers that the teachers had remained less active members of the partnership for this extended period of time. While some studies (Butler, Lauscher, Jarvis-Selinger, & Beckingham, 2004; Morrow & Casey, 2004) of teacher change attribute significance to "time" as a largely immutable factor, it is argued here that attributing lack of progress to the "time required for change" provides an inadequate and superficial explanation for the resilience of teachers' beliefs, actions, and knowledge in the face of some professional learning opportunities. The alternative position is to scrutinise the events and processes that occurred to determine which were effective in facilitating change, in this case examining how it was that the teachers became increasingly involved as research partners.

The research literature warns that collaborative partnerships can be problematic when the teachers come from schools and researchers come from universities or institutions that operate from different priorities (Cole & Knowles, 1993; Henson, 1996). This situation seemed to be resolved within this group. To some extent this could be attributed to the fact that the principal researchers were involved in predominantly school-based professional development and research and understood the priorities of schools. Also, they had previously created co-operative relationships with the teacher partners through literacy professional development projects that the principal researchers had facilitated for the teacher-researchers. It is not possible to ascertain the degree to which this history influenced the progress of the partnership rearrangement. However, it is important to acknowledge that the teacher partners came to the project with a set of expectations concerning ways of working with researchers. While the participants could articulate the research collaboration goals for the TLRI project, the realisation of these goals could not be assumed.

## Identifying expertise

In the interests of creating partnerships that were collaborative rather than co-operative, from the point of writing the TLRI project proposal, the teacher-researchers and the principal researchers negotiated their roles, responsibilities, and commitment to the project. As part of this negotiation, each teacher-researcher and principal researcher was understood to be bringing their own knowledge and beliefs to the project. Each school was acknowledged as a unique community. The processes and sentiments of these original negotiations paved the way for collaborative ways of working, but did not ensure their immediate actualisation.

The change in the project from co-operative to collaborative ways of working between all partners was achieved only as each of them became convinced that there was expertise to contribute and learning to be gained for all. Initially, some of the teachers not only expected that the principal researchers would provide solutions, but that they would already be "all knowing" rather than genuine learners who would truly benefit from their involvement in the partnership:

> March came along and we met with the rest of you here, down in Dunedin and at the time we came here, we just, you know, even though everybody was saying that [the researchers] weren't the experts, that you know, they were the researchers but working in partnership with us, we still didn't really know what that meant. We still were assuming, in our heads, they're saying that but I reckon they'll be all the experts and we'll just get all this, you know, ideas from them and all the rest of you guys … we would just go and run whatever you'd given us because that's how we're used to PD happening, you know.

For the participants in this project, their belief that they would contribute expertise and knowledge to the learning partnership was demonstrated to be a central factor in progressing the collaborative research partnership. It was recognised by the principal researchers that in a research partnership that also aimed to provide professional development for the teacher partners, it is not uncommon for the researchers' knowledge and expertise to assume superior status over that of the teachers. From their experience with the previous literacy professional development arrangements, the principal researchers' expertise was to some extent anticipated by the teacher-researchers.

However, the aim of this research partnership was to develop, trial and implement pedagogical approaches using the scope and sequence chart of literacy skills (McDonald & Thornley, 2005). This task, when considered against the range of content areas and class levels in secondary schools, ensured that there was ample space for the teachers to contribute and develop their expertise. Similarly, this approach demanded that teachers were viewed as individuals, and their contexts of work were unique.

While the principal researchers had some knowledge concerning the ways in which this literacy curriculum might be implemented, the teacher-researchers were more centrally placed to extend this knowledge through their engagement in the project. The teacher-researchers were able to trial, problem-solve, and shape the range of approaches and content of the literacy instruction that seemed to be most suitable for the various contexts of their work. As one teacher reflected on the value of the original research that the principal researchers brought to the partnership:

> It's been good having the expertise … it helped us to experiment … like a springboard … trying to improve the literacy skills [of students].

## Taking an expert's role: communicating findings

The literacy research that informed the project indicated that changes in student outcomes would be most likely to occur where the literacy instruction was included across the students' content-area classes. On this basis professional learning needed to occur on three levels. The teacher-researchers received some literacy professional development from the principal researchers to ensure their understanding of the scope and sequence chart. Then the teacher-researchers provided professional development to colleagues. The principal researchers learned from the teachers' development, trialling, and reflection on the literacy content and pedagogy and the findings as they were generated through the project.

In the first year the principal researchers had predominantly led the professional learning activity. As the project progressed, particularly into the second year, the teacher-researchers were observed to become more active in leading these learning opportunities for their colleagues. In this way, they increasingly imitated the role of the principal researchers and assumed responsibility in this component of the partnership. They engaged in planning and teaching demonstrations for teacher colleagues to observe. This demonstration of pedagogical approaches for colleagues affirmed the idea that the teacher-researchers replicated the kinds of professional development that they felt had been most beneficial to their own learning:

> So seeing you [principal researchers] up there and teaching it and seeing it work and then having that confidence and then seeing my colleague's demo … it's given me the confidence to do it and then to have other people come and sit in my class and be able to demonstrate umm, for them. … it needs to happen, people need to see it work, you know, having it demonstrated, otherwise they won't buy into it.

Not only did they replicate the approaches that they had experienced but also the content. In this way they drew on the research findings that had been brought to the project. These findings were

augmented by those that were arising from the research activity concerning student achievement as an outcome of their changed literacy instruction undertaken within the first year.

As the teacher-researchers became more active as decision makers, responsible for offering professional learning based on the research findings, they identified the need for their school-based research team to create a presence within the school. The teacher-researchers in Schools One and Three, who began the project with just two teachers, increased this number by one and two respectively and found this beneficial as they attempted to spread the influence of the project to their sometimes reluctant colleagues:

> It's just the enthusiasm of the team that's just kept us going. I think we, we go because we support each other. I think if you were one person having to deal with it all, it's easier to just think this is way too much for me to keep battling … I think that's been the big thing that umm, for me, why we've stuck at it, in addition to our own practice.

## Taking an expert's role: generating findings

The use of the research findings to inform the professional learning activity that the teacher-researchers provided appeared to act as the catalyst for the shift from cooperation between the research partners to collaboration. This shift was observed to occur initially in the ways in which the teacher-researchers thought about and used data. As described earlier in this report, at the commencement of the project the teacher-researchers were generally unfamiliar with research methods. However, as the focus of the professional development events provided in the project was on both adolescent literacy and research theories and practices, the shift by the teacher-researchers toward initiating research activities was observed as the project progressed. As the teacher-researchers became more knowledgeable about adolescent literacy and the pedagogical approaches that were appropriate for their students, they became more aware of the ways in which they might gather, analyse, and interpret research data to inform the project. Similarly, they demonstrated a greater understanding of the types of data that would be valuable to collect in that it would assist them to evaluate the changes in their practices.

Following the first TLRI group meeting, the teacher-researchers elected to record personal reflections on their planning and teaching. In the first instance there was a higher level of commonality in the way that this was completed. One of the lead teacher-researchers was keen to use web-based methods that could support community reflection and set up the mechanisms for this to occur. While this was used by a small number of the team members, the potential of this recording to foster interaction across the team was not reached. This practice appeared to be constrained by the varying degrees to which the team members had used communication technology in their previous learning and teaching. Over the course of the project, some form of journaling was used by most group members to record and further conceptualise their learning:

> [I used it for] reflecting on my own classroom practice. Writing about it, journaling and umm, seeing what works, see what doesn't reformatting things to suit my kids because sometimes what works in someone else's class, umm, may not necessarily work in, in mine.

As the project progressed and the teacher-researchers observed the principal researchers using a range of data sources to produce understandings in relation to the research goals, the teacher-researchers became increasingly involved in using the findings that emerged from the shared analysis and interpretation. Increasingly, the teacher-researchers took on responsibility in this regard. In some instances, the teacher-researchers sought support or assistance from the principal researchers to undertake this aspect of the work. Most often they would create or implement data collection in relation to student literacy learning or teachers' literacy instruction. Given the principal researchers' concerns that the teacher-researchers needed to become more active as research decision makers, they responded to these requests, modelling the ways in which researchers would work with their data, analysing and theorising that which they collected to produce findings that could inform the progress of the project. Table 5 below illustrates the range of research tools that were independently developed, or refined and used by some or all of the teacher-researchers.

Table 5 **Research tools used by teacher-researchers**

| **Data gathering and recording** | |
|---|---|
| Journal record of teaching | Teacher-researchers developed and maintained a record of their teaching (published in on-line community or retained in personal journals) and the student responses across their target classes. |
| Text audit (record of times that students engage with text in each subject) | Teacher-researchers recorded the use of texts in their lessons. They noted the type of text task and frequency of use. |
| Concept mapping | Teacher-researchers used concept mapping with teacher colleagues to record growth in teachers' literacy knowledge and changes in teachers' practices. |
| Observations | Teacher-researchers observed and made records of the teaching by their teacher colleagues and by the principal researchers in a range of classes. |
| Student focus groups | Teacher-researchers identified/reviewed/refined the research questions and requested that the principal researchers conduct focus groups for them or with them. |
| Student surveys | Teacher-researchers developed student surveys to investigate the students' perceptions of the efficacy of the pedagogical approaches that they were trialling with them. |
| E-portfolios | Teacher-researchers developed student e-portfolio based on the skills in the scope and sequence chart. The portfolios are to be used in conjunction with the students to track learning throughout the years of school and across the curriculum. |
| Feedback/monitoring sheets | Teacher-researchers developed feedback sheets to record student progress with and for the students. |

## Taking an expert's role: Theorising findings

The use of the teacher-researchers' reflections to inform the discussions with the principal researchers was a feature of most of the teacher-researchers' practice from the beginning. However, in a number of cases throughout the project, the use of the research literature to theorise teacher-researchers' and principal researchers' changing practices was also noted. This practice transformed the reflections from superficial personal forms to that from which deeper discussion and meaning making could occur:

> I had to reflect a whole lot, both for this research and the one [university paper] I'm doing, which is really, in a sense, a very similar thing … I just found my own practice has gotten better for it. [Without the reflection] … It wouldn't have because I would have just, you know, I probably would have done something very superficial. I think the research component makes me sit down and say, right, you know. What's working, what's worked, why has it worked, and if it hasn't, well why hasn't it worked? I haven't done that for every lesson but you know, I've got that at the back of my mind when I'm looking at things … the key was reflective practice.

The lead teachers, who in most cases took on the researcher role to the greatest extent, generally emerged from the project as having learned the most about research. Not surprisingly, the lead teacher-researchers were more actively involved in the project. They made more research decisions, communicated findings more frequently with their colleagues, and were leaders in the data analysis:

> I probably felt, as a secondary school teacher, a little bit, maybe threatened by the researcher image … I think that when I was at university, I didn't do a thesis, so I knew that you did research but I don't think that I felt that I had the background skills in it … [now] I would see myself as an informal researcher. I think if I had to do a research project, I probably could.

Teacher-researchers from one of the schools, who were studying at university, talked about the ways in which they had been able to incorporate their own study into the work of the TLRI project. These teacher-researchers often referred to these links when they met for the TLRI project group meetings. While most of the teacher-researchers identified growth in their research understandings and practice, some remained more reticent about their skills and abilities:

> But you have to be a bit more formal about it, a bit more organised about it, a bit more directed in that you can direct it to what you want … And the other thing is that you, you ask yourself questions that you didn't before, of various aspects of your teaching and I think you notice things that you wouldn't have before because you look at them in a different way because you've just got that outlook now

It seemed that having increased opportunity to use and theorise the findings, discuss the research component of the project was influential in building teacher-researchers' confidence.

## Creating a culture of change

Some of the teacher-researchers who were interviewed believed that they had really taken on the mantle of research, albeit to varying degrees, but they felt that the teachers whom they worked with in their schools did not necessarily see why they would need to "go that direction" as part of their teaching:

> They [other teachers] see that [research] as professional development, what they can do in their classroom to change the kids' learning … they'll come up with some ideas and things that may lead to research but kind of pass that on to [lead teacher-researcher] to knock into shape.

It was envisaged that as teacher-researchers increasingly undertook research practice in their schools, there would be a shift in the culture of professional learning; and the likelihood of creating an environment for sustainable professional learning and improved practice would be increased. However, in talking with the teacher-researchers about the changes they had made to their practice as a result of their involvement in the project, there was a noticeable difference in their self-perceptions regarding their literacy practice as opposed to their research practice. For a number of reasons, not least their relative unfamiliarity with research, they felt less confident about the prospects of establishing and maintaining the research culture in their schools:

> I don't think we've made enough progress yet. I don't think we've actually developed enough yet as researchers, you know … it would be nice to have that research culture sort of firmly embedded. We've got the evidence-based sort of culture, but it isn't quite the same, you know. Looking at data, isn't quite the same as, umm, as, as a research process. I mean it tends to be sort of, if the practice have become fairly institutionalised and you're using the data to, to maintain sort of umm, existing practice and existing knowledge rather than you know, be looking for, for new knowledge, creating new knowledge.

There was also some comment that indicated the teacher-researchers saw the conflict that existed between their primary roles as teachers and that of teacher-researchers. The demands of their daily work meant that it was easy to be drawn from the role of researcher that needed space and distance for the reflective process:

> You can't expect a school to become a research-driven community because there isn't that knowledge there. There isn't that culture there. Umm, it's a different, it is a different culture. It's one which is about practice and it's day to day, minute by minute sort of practice rather than, let's stand back and take a really good look at what's going on and, you know, how we can sort of grow our understanding of what's going on.

Together these comments encapsulated the challenges that the teacher-researchers saw to their capacity to sustain research projects outside the teacher–researcher partnership arrangements. The partnership had offered the teachers a different professional development experience; one that was accompanied by the opportunity to be research decision makers rather than the researched. The teacher-researchers assumed the role of researchers while maintaining their commitment and expertise within the classroom, while the principal researchers focused on maintaining the research momentum and emphasis within the partnership. It was generally agreed that this type of

collaborative partnership resulted in outcomes that the participants believed would not otherwise be achieved:

> I think it most probably strengthens the case for the hybrid … where you have got researchers alongside. If the relationship is right and I think the relationship has been right, we don't feel that we are being subjects of research

## Towards new knowledge, pedagogy, and expertise

### Identifying the changes

As the project progressed, changes were evidenced in the knowledge and understandings of all of the participants. As described earlier, the principal researchers learned mainly about professional learning and research partnerships. However, the teacher-researchers' knowledge base developed not only in that area but also in relation to adolescent literacy practices and the curriculum and assessment demands of secondary schools. As an outcome of this knowledge, changes in teaching approaches and content were implemented. Results from the concept maps that teacher-researchers completed during the projects exemplified these changes and are listed in Table 6.

Table 6 **Teacher-researchers' changing literacy knowledge**

| **Challenges identified 2006** | **Responses early 2006** |
|---|---|
| Reluctant readers | Prereading exercises to build content knowledge<br>Teacher-supported reading/read aloud |
| Poor readers/reading for main idea | Compensatory reading in easier texts<br>Develop word-attack skills<br>Relate individual experience with content of text<br>Teach skimming and scanning<br>Comprehension exercises |
| Limited vocabulary/ terminology | Vocabulary study, spelling<br>Word lists |
| Poor grammar | |
| Poor expression/use of information | Three level guides, writing frames |
| **Challenges identified 2007** | **Responses 2007** |
| Finding out about students | Focus on developing assessments of actual student need in order to inform teaching<br>Integrate frequent data points on progress<br>Develop structures/professional learning groups to focus on student need and to build pedagogical knowledge |
| Dealing with complex information | Modelling active reading approaches |
| Familiarity with a wide range of text forms | Introduce students to a wider range of texts in content areas<br>Develop rubrics of the features of text forms and purpose for writing in those forms |
| Structuring reading/information gathering according to task | Use surface features to identify main ideas<br>Developing student journals of reflections on reading<br>Discuss/teach to/reflect on key issues in curriculum-level text<br>Locate literacy challenges in science concepts |
| Student writing lacking evidence | Develop note-making skills specific to tasks/texts<br>Refer students back to texts<br>Identify and describe what counts as evidence |
| Student writing lacking structure | Peer assessments, develop rubrics to guide writing<br>Develop exemplars with students, compare/contrast, evaluate |

As described previously, the degree to which the changes in instruction occurred varied across the three schools. At School B, a crosscurricula approach was adopted. The teacher-researchers and the teachers investigated the opportunities that students had to engage with extended text. They sought professional-development support from the principal researchers and they formulated a set of teaching approaches that they introduced to students across year levels. By the completion of the project at this school the following changes had evolved:

- Increased engagement on the part of students in extended text across content areas for increased reading mileage. Across different content areas teaching and learning activities looked somewhat different.

  As an example, in science this meant that teachers returned to using the text books they had previously abandoned because students couldn't read them independently. In large part these texts were used to provide information for students to build their understandings in new topics. In many instances students were instructed in how to take notes on specific topics or they engaged in extended discussions about specific topics with their peers.

  Similarly, in senior biology students worked with their teacher on developing research questions that would meet the requirements of NCEA Level 3 standards. They then broke the topic down into specific research questions which became tools for reading, independent note making, and research writing.

  In English, where the focus is often on literary response and analysis, students received instruction on how to search for theme in fiction through the interrogation of the speech and actions of characters in time and place. These elements then became areas for note making that drove students' reading in and across texts insofar as the need to identify, describe, and critique the tools that authors use in constructing theme is a common task within that curriculum area. In so doing they provided teaching and learning opportunities for students in locating key information in relation to a topic or task.

- Orientation to the text by teachers using the form and surface features of expository or persuasive text for developing independence in locating information and for the building of content knowledge of the text. In the curriculum areas in which students were expected to interact with these text forms, teachers alerted students to and questioned them about the ways in which authors provided information in headings, subheadings, tables, maps, etc They also alerted them to the ways that grouping this information can provide the reader with background knowledge of the information to be conveyed in the running text. With respect to the utility of knowledge of the form of the text for meaning making, students learned that expository text is organised logically and that the introduction and conclusion will provide background as to the content of the body of the text (prior knowledge). In addition to this information, students learned that expository text was factual, should include supporting evidence and explanation of key ideas, and that it is important to separate major points from supporting information so as to build understanding.

  As for expository texts, students learned that persuasive texts should follow a logical structure and that surface features and introductions and conclusions can be used to build a knowledge base of the text before engaging in reading for deeper understanding. In addition to this, students also learned that authors use a range of "tools" such as recourse to "experts", facts, emotive language, and repetition to convince a reader to their position, and that through the recognition of these tools students could build their understanding.

- Frequent teaching and practice at making notes for generic knowledge building or for specific tasks. Across the core curriculum areas, students began to write their own notes. In some instances students used the subheadings in the text to gather notes for general information. In other instances they were taught to break down tasks or research questions they had been given and then to use these "sub" questions to gather their notes. In many cases it was found that the note-making process assisted the meaning-making process insofar as students needed to be looking for specific items of information in text and then to think about how to organise their notes around the headings they had that related to the task they had been given.

- Teacher questioning on the process of gathering information rather than on content only.

  In many instances teachers moved their questioning away from content and focused on getting students to think and talk about the process they had gone through in gathering information. Such questions included references to the text (e.g., tell me where you found that?, why might the author have written that in that way?), references to thinking or reasoning (e.g., tell me how you arrived at that point?), references to the process of inferring or synthesising information (e.g., what information did you use to arrive at that point?, why did you use that information in that way?) and references to focus students on the use of multiple tasks (e.g., can you find other information to support that point?).

- The making of explicit links across content areas on the process of reading and writing undertaken. Given the extent to which teachers became familiar with the ways their colleagues were working with students in other content areas, as occurred through the meetings, they were increasingly in the position where they could make concrete links to the activities students engaged in, in other content areas. Being able to say to students that a particular activity was the same as the work they had done in another class appeared to assist students in their proficiency in using particular literacy approaches.

In the other schools where the work focused on the teacher-researchers, a similar but more confined collaboration evolved. In general, teacher-researchers described in interviews and through the concept maps that they had developed a range of approaches to support their classroom instruction. Generally, and as was the case at School B, teacher-researchers described themselves as less focused on the production of written pieces or on the accuracy of content gained, but on the strategies or approaches students went through in the production or information-gathering processes. Along with a focus on engaging students in their learning, teacher-researchers identified the following pedagogical approaches they had adopted:

- Clear articulation of the purposes for (learning intentions) and expected outcomes (success criteria) of teaching and learning. Literacy learning intentions and success criteria were now included along with subject-based purposes, so that the students became aware that this was an important aspect of the tasks they were expected to undertake.

- Identification of a set of generic skills that students could use across curriculum areas. These skills included ways to gather appropriate and accurate text-based information for a range of purposes. In numerous classrooms, teachers were observed to ask the students to begin their reading by previewing the content material contained in text features, to set up a table for gathering notes from the text features and running text, and to use these notes as the basis for organising the content for their writing.
- Consistency in literacy teaching approaches across curriculum areas to increase transferability became a common aspect of some teachers' practice. They fashioned the instruction in writing to match that which the students received in other curriculum areas. Where there were necessary differences in the ways in which students were to complete tasks, teachers talked about these and explained the rationale for them.
- Multiple opportunities for students to reflect on past learning and to hypothesise in relation to future learning based on previous experience. Lessons were linked one to another and processes were described so that students came to see patterns in their work and become more independent as they encountered new tasks.
- Providing scaffolded instruction. Teachers used year-level-appropriate texts. When reading or writing tasks were challenging or unfamiliar, teachers initially provided higher levels of support by moving through cycles of modelling, shared reading/writing, group work, and individual practice. At all points in the instruction, the focus remained on building students' knowledge and skills for their literacy independence.
- Engaging students through reflection on learning, self- and peer assessment, and evaluation of learning. As instruction became increasing explicit and linked to the purpose for the learning, many students became more precise and informed about the kinds of reflection and assessment information that was useful to their individual and collective learning.
- Providing frequent, clear, and specific feedback to students on their progress. Students received multiple sets of feedback to inform the progress of their work. Written work came to be viewed more as an integral component of the learning, rather than a product.

As an outcome of changes in literacy teaching and teacher pedagogy, teacher-researchers said:

> I feel like, for the first time, that I'm actually teaching … when I see a response from students
>
> It's formalised what I was doing in the sense that now I'm focusing on skills and I have in my head, probably quite a clear set of strategies that I could employ.
>
> I'm standing back more, creating space for students to reflect and build knowledge.

## Developing literacy knowledge and expertise: Text and curriculum challenges

In order to achieve the changes in the literacy content of their teaching, and to implement innovative pedagogies, the teacher-researchers accessed new knowledge and understandings from the professional development available through the project. These activities developed their understandings of the literacy demands inherent in the texts students needed to read, the challenges of the curriculum, and the ways in which adolescent students perceived and experienced literacy activity and learning. As a result of the research as professional development, the teacher-researchers also noted that they were much better able to analyse the challenges students were likely to encounter in the texts they needed to read, to identify the strategies necessary for reading success, and plan the corresponding teaching that would lead to that success. In some instances, this led teacher-researchers to introduce texts into their classes that would otherwise be used in other classes in order to stress the transferability of skills:

> I think kids do come into the classroom and think English is over, that's that. I can pack my book away and compartmentalise. I'm going into Maths. I've got to use a different set of skills. Umm, without realising that they can transfer that, but that can only really happen if the teachers see themselves as teachers of reading and reinforce each others' work … I would never have done this if I wasn't doing the project, I would focus on my content area which would have been narratives and poetry, in forms of text. But I actually started targeting text from other areas so that the kids could see that what we were doing in English was actually learning how to read a text and that they could use the same thing, and I did talk to them openly about it. I did say to them, you know, what we're doing here's not just for English.

Across the three schools one by-product of the collaboration , was an increase in the knowledge that the teacher-researchers held about the literacy challenges students encountered in content areas other than their own. Each of the teacher-researchers shared their knowledge about their own content area as well as that which they had learned through the content-area teaching and planning that they had done with teachers in their own schools. In this way, the literacy approaches developed were able to be trialled and evaluated in a range of contexts. This situation meant that teachers could better articulate the ways in which skills transfer might take place. It also made it possible for the project participants and other teachers to make the links between literacy in various subjects explicit to students. As one teacher-researcher described:

> a comment from some [students] was that they liked the fact that we seemed to be sharing stuff and I think as a group of teachers, the students have confidence in our ability anyway and where they see that we're all talking about the same issues, the same concerns, the same sorts of skills and reinforcing the same processes, that gives them the confidence to use it elsewhere and I think that that's been a huge thing this year.

## Developing literacy knowledge and expertise: Student-centred approaches

The overriding pedagogical change identified from interviews and teacher observations was that teaching became much more student centred and, as a result, many students were seen to be more engaged in their learning than had previously been the case. As has been raised previously, a focus on student learning brought about a change in the way that data became viewed as formative information and as an indication of what students had achieved and were yet to learn in relation to the curriculum and assessments of secondary school.

As part of this move towards a more student-centred approach to data interpretation, there have also been numerous instances of students being engaged in the analysis of their own work and in the identification of 'next steps' for learning. One teacher-researcher noted that she is "throwing things back on the kids and making them try to just reflect on their own practice, if they can say their own skills, [and] what they can do." The net result of this approach was reflected in the following comment by a deputy principal:

> When we look at the kids, especially the kids in that skills, that Year 11 Skills English class, umm, you know, these are kids who don't do particularly well in lots of other areas of the school but they know exactly where they're at in English and, I mean, there's one I'm dealing with, not in a subject context, but in sort of a senior management context and she's able to tell me exactly where she's at and exactly what she can do and exactly what her next steps are going to be.

## Developing literacy knowledge and expertise: Interpreting and using data

As an outcome of taking a research approach to professional development, the teachers described themselves as more capable of determining literacy teaching and learning issues using a wider range of evidence. As outlined previously, this evidence was gathered through increased understanding of their instruction in relation to the demands of the curriculum, the texts that students needed to be able to read and write for learning and assessment, and the achievement data showing students' individual and collective strengths and needs.

While there had been some use of achievement data by the teacher-researchers prior to their participation in the project, the range of data that they came to use was extended. Similarly, taking a research approach brought about changes in the way that they came to interpret data, comparing one set against another to deepen their understanding. Some of the teacher-researchers commented that they had previously seen data, but not been involved in the analysis or, more importantly, the interpretation of students' results in relation to their learning needs, the curriculum, and the pedagogical approaches that were appropriate:

> So I think that the use of the data has forced me to focus on it because the students have come through as having a tremendous gap and a huge need and that I had to address it.

> It's made me narrow my focus and be more systematic, the ability to analyse data and draw conclusions … has been an enormous bonus for me.

The outcome of taking a research approach to data interpretation was also described as changing the way in which the data was applied to the instructional context, resulting in responsive or deliberate teaching and explicit questioning:

> I'm more conscious of the way I actually try to talk to the class about [surface features] … I am more deliberate in, in pointing things out and, and that and just questioning. Umm, I tend to ask a lot more questions. I use, you know, I thought I had asked a lot of questions umm, before but my questions have changed. You know, I, I would ask a lot of questions around different things but my questioning styles and techniques have changed. It's more about how did you get that answer and what made you say that.

This increased recourse to evidence and associated increased literacy knowledge brought about further changes. As one teacher-researcher explained, their talk changed as a result of the collaboration as they trialled and reviewed the pedagogical approaches:

> We've done a lot of meeting together, a lot of talk, a lot of discussion and that was for planning a pathway through it.
>
> We bounce ideas off each other and we try things out … then we say okay, what worked, what didn't work, and why
>
> You're not too embarrassed to say you don't understand something because you know no one's going to laugh at you.

An important characteristic of this evidence-based talk was that it was not restricted to the teachers and researchers. Over time, it came to take account of the students' perspectives. In the first instances, this talk was about the literacy content of the curriculum and assessment tasks that the students faced:

> People are talking more and so we're doing that professional talk about what do you do when the children write a report? What will it look like in science or how do they read this and so I think we're actually saying to students, look in the last class when you were with Mr or Mrs So and So, can you remember doing this?

Later it came to involve students' comments about the instruction, their learning, and the research that their teachers were undertaking. The student focus groups and surveys genuinely sought student knowledge and perspective and the findings became an important source of new learning to the teacher-researchers and the principal researchers.

## Outcomes

While the above points attest to the changes teacher-researchers made in their practice with students, it is important to note that, as identified by a number of the teacher-researchers, their teaching and learning had really only focused on the left-hand column of the scope and sequence chart. Students were oriented to text through an analysis of text form, and to text features (surface

features) as a way of identifying the location and nature of the information to be read along with the content that they would meet as they read. In addition, students were asked to gather information (note make) from single sources of information and to engage in the gathering of evidence to ensure the accuracy of their interpretation (cross checking). This situation was borne out by a comment from a principal noting that although "teachers had a good understanding of the literacy theoretical framework … we've still got things to work on."

## Student achievement

Over the two years of the project students made gains in their achievement that in large part mirrored the gains in teacher knowledge described previously. In order to describe change and to determine "next teaching" by teacher-researchers, students completed two forms of assessment as a part of the wider project (in addition to the formative and summative assessments they completed as a normal part of their work), and numbers of students participated in focus groups to discuss their literacy learning and understandings.

The primary assessment tool used across the schools to determine change was asTTle. Students in each cohort participated in these assessments at the beginning and the end of each year of the project.

The second assessment tool, referred to as the EdAssoc assessment, uses curriculum-level-appropriate text (such as a section from a science text book) that students read in order to respond to questions that are designed to assess their ability to use the skills on the scope and sequence chart. These assessments serve a dual purpose. The first is diagnostic insofar as it is possible to determine a student's learning needs against the scope and sequence chart and for teachers to identify next teaching as a result.

The second use of the EdAssoc assessment is comparative. For each assessment a scoring guide has been developed and each of these contain standard criteria to determine the comprehensiveness of an individual response on a five-point scale, along with examples of student responses at each level. Each gradation on the scoring guide reflects the increasing accuracy and completeness of the information used by a student in crafting a response. Once individual test items were scored using this guide, and bearing in mind the increasing difficulty of the texts used as curriculum demands increase, it was possible to plot a student's progress against the scope and sequence chart as arising from teaching.

In order to provide further information on the extent to which students participated in literacy activities that asked them to reflect on their learning and evolving understandings of strategic reading and writing, numbers of students across cohorts participated in focus groups. Each group was asked about the literacy activities they engaged in as a regular part of their instruction and out-of-school activity, what they thought the literacy challenges were in different curriculum areas, and how well they felt they were prepared by classroom learning to meet the challenges

they encountered. As these discussions progressed, a visual record of the discussions was made on a whiteboard by one of the researchers. At the end of the discussion students were asked to review the record, to comment on its completeness, and to suggest revisions or additions.

## asTTle assessments

Table 7 describes the changes in student achievement recorded using asTTle assessments from February 2006 to October 2007 for those students in the TLRI cohorts in each of the three project schools. The national average growth scores were sourced from the asTTle V4 manual (Hattie et al., 2004, refer Manual 1, Chapter 3, Table 3.1, p. 24).

The manual also suggests that in order to interpret growth from these scores the readers should be aware that there is a standard error of measurement of plus or minus 15 and that "a difference of more than 15 points does represent a statistically significant difference and can be used to identify educationally meaningful change" (Hattie et al., 2004, pp. 25–26). Further to this the writers of this manual suggest that if students improve by more than the national average score per year, they are learning more quickly than expected (p. 24). Similarly, if students improve by one curriculum level (three sub levels) in a two-year period they are learning more quickly than expected (p. 25). Each instance in which these changes occurred in relation to student achievement as recorded on asTTle are presented in red in Table 7.

Table 7 **Growth in asTTle scores during TLRI project**

| Student Groups | N= | asTTle 02/06–11/06 | Growth | National average growth | asTTle 02/07–10/07 | Growth | National average growth |
|---|---|---|---|---|---|---|---|
| **School A** | | | | | | | |
| Year 9, 2007 | 44 | | | | 524–597 3B–4B | 73 | 73 |
| Year 10, 2007 | 34 | 563–579 3A–4B[a] | 26 | 73 | 590–647 4B–4P | 57 | 89 |
| Year 11, 2007 | 21 | 551–607 3A–4B | 56 | 89 | 668–706 4A–5B | 99 | 85 |
| **School B** | | | | | | | |
| Year 9, 2007 | 14 | | | | 570–680 3A–4A | 110 | 73 |
| Year 10, 2007 | 13 | 567–581 3A–4B | 24 | 73 | 614–674 4P–4A | 93 | 89 |
| Year 11, 2007 | 12 | 556–611 3A–4B | 65 | 89 | 697–752 4A–5P | 141 | 85 |
| **School C** | | | | | | | |
| Year 9, 2007 | 17 | | | | 475–565 2A–3A | 90 | 73 |
| Year 10, 2007 | 14 | 539–526 3P–3P | –13 | 73 | 523–620 3B–4P | 97 | 89 |
| Year 11, 2007 | 11 | 578–620 3A–4P | 42 | 89 | 697–733 4A–5B | 113 | 85 |

[a] Curriculum sublevels.

In relation to change generally, students across the three schools made much greater gains in 2007 than they did in 2006, where progress was below the national average for those year levels. In 2007, five of the nine cohorts made growth of a level that the asTTle writers describe as "significant". Three further cohorts made gains the same or greater than the national average that fell within the margin of error and only one cohort made gains of less than the national average for their year level. Over the two years of the projects, however, and despite low progress in Year I, seven of the nine cohorts made "greater than expected" growth in relation to progress through the curriculum levels, and the other two made expected growth.

## EdAssoc assessments

As has been raised previously, students' responses to questions on the EdAssoc assessments have been compared across the assessments they completed to determine where changes in their literacy understandings have occurred. This comparison was completed using scoring guides that

were developed for each assessment. These describe the responses students would make on individual questions as they were able to extract more information from a text and then to use that information more purposefully.

For the purpose of developing the scoring guides it is our contention that there are a range of tactics or behaviours a student could use in undertaking each of the skills identified on the scope and sequence chart. For instance, in order to identify the main idea in a paragraph, a student could look for repetition of points, they could eliminate examples or they could think about the relationship between the preceding paragraph and the one they are reading. Similarly, in completing an inferential question, a student would need to identify clearly what the task required, they would then need to source relevant information from the text and use that in generating a new understanding. In both cases, the greater the number of tactics a student uses, the greater the accuracy and completeness of their understanding and response.

In preparing the scoring guides it was necessary to identify the tactics sitting behind a skill. We then developed sample responses that illustrate what a "typical" student might say if they i) did not use tactics; ii) used a limited number of tactics; iii) combined tactics; iv) ensured the accuracy of the information available through cross checking information from tactics; and v) developed a complete and coherent answer using all of the available tactics.

Individual student's responses to questions were then compared with the examples provided in the scoring guides and a determination was made as to the extent to which their responses match those on the guides in each of the five categories described above. Given that the texts students are expected to read increase in complexity as they progress through the system, and the questions they are asked are also more complex, we assume that if a student either increases or maintains their score on items in the EdAssoc assessments, then they have made progress.

Data was collected from students using EdAssoc assessments in February 2006, February 2007, and October 2007. However, only comparisons of selected data are reported here. For students in Year 10 in 2007, assessments from February 2006 and October 2007 are compared. Data from February 2007 and October 2007 is used to report growth for students in Year 9 in 2007. Year 11 student data is not reported here because the Year 11 cohort at School C did not complete the final assessment.

As identified on Table 3 (p. 29) some difficulties were encountered in ensuring students took the assessments at each data point. Insofar as these assessments were used for diagnostic purpose, the responses made by all students were considered. For comparative purposes, however, only the results from students who completed both assessesments are reported in Table 8 below. In addition to this, and as a result of differences across the texts, not all skills on the scope and sequence chart could be assessed at each assessment period. For purposes of this comparison only like skills are reported.

Table 8 **Number of students scoring in each of the five categories of the EdAssoc content area literacy assessments**

| Student Groups | Year 9, 2007, N=72 | | | | Year 10, 2007. N=81 | | | |
|---|---|---|---|---|---|---|---|---|
| **Level scores**[1] | **0** | **1** | **2** | **3** | **0** | **1** | **2** | **3** |
| Question One: Predict content using text features | | | | | | | | |
| Time 1 | 24 | 37 | 11 | | 43 | 21 | 17 | |
| Time 2 | 33 | 33 | 6 | | 12 | 51 | 18 | |
| Question Two: Make inferences, cross check using text features | | | | | | | | |
| Time 1 | 69 | 3 | | | 72 | 9 | | |
| Time 2 | 16 | 44 | 9 | 3 | 23 | 40 | 18 | |
| Question Three: Identify main idea using knowledge of paragraph structure | | | | | | | | |
| Time 1 | 50 | 22 | | | 41 | 40 | | |
| Time 2 | 50 | 17 | 5 | | 41 | 32 | 8 | |
| Question Four: Integrate information from text features with running text | | | | | | | | |
| Time 1 | 60 | 12 | | | 61 | 20 | | |
| Time 2 | 57 | 9 | 3 | 3 | | 40 | 41 | |
| Question Five: Make inferences | | | | | | | | |
| Time 1 | 35 | 37 | | | 33 | 35 | 16 | |
| Time 2 | 51 | 10 | 10 | 1 | 51 | 25 | 5 | |
| Question Six: Categorise information | | | | | | | | |
| Time 1 | 35 | 35 | 2 | | 46 | 35 | | |
| Time 2 | 5 | 2 | 24 | 41 | 26 | 18 | 18 | 10 |
| Question Seven: Summarise information | | | | | | | | |
| Time 1 | | | | | 61 | 15 | 5 | |
| Time 2 | | | | | 20 | 15 | 35 | 11 |
| Question Eight: Solve vocabulary problems | | | | | | | | |
| Time 1 | 17 | 24 | | | 36 | 45 | | |
| Time 2 | 21 | 19 | 1 | | 13 | 13 | 53 | 2 |

[1] No student scored four on any assessment.

As will be noted from a review of the data, most change occurred in relation to Year 9and 10 students' abilities to gather information from the surface features of a text and to integrate that information with that from the running text. That is, students were better able to identify and gather information relevant to a specific question and to generate a response on that basis. For the Year 10 cohort, there was also a notable improvement in solving vocabulary problems, and the

ability to gather specific information translated into increased skills in writing summaries. In general, these questions also asked students to gather information specific to a task.

Interestingly, the information-gathering skills students developed in the project were not translated into the more generic "main idea" sections where students were asked to read generally rather than to gather specific information. As the texts became more challenging over the two years of the project, it would appear that students' skills in the area of inference did not keep pace with either text or task.

## Focus groups

Groups of students across all three schools participated in a number of focus groups over the two years of the project. During these meetings students were asked about their understandings of literacy, the importance of literacy skills across the content areas, their access to literacy activities and instruction, and their preferences in relation to the best ways of approaching the learning of content-specific literacy skills. The focus groups consisted of a range of students depending on the nature of the individual project in each school. For instance, at School A, focus groups included those students involved in the Year 9 literacy classes, at School B focus groups included a cross section of students from Years 9 to 12, and at School C focus groups were drawn from the English-class cohorts in that school. In each school, focus groups met once or twice a year.

While there were variations across the schools, most students initially saw literacy activities as occurring primarily in English. They said that it was in this subject area that they did the bulk of the reading and writing work undertaken at school, and as a result, it was also where most instruction took place. In other subject areas students said that they rarely read "longer" (extended text, such as the novels required in English) and that when asked to read on other subjects, they mostly did so from whiteboards or from teacher-prepared notes. In these other classes, most of their writing was generated either from notes to be copied or worksheets to be completed. One exception to the above comments came from senior students at School B who frequently had to complete correspondence courses due to the small size of the school and so engaged in numbers of reading and writing tasks that others did not.

At School B, teachers undertook an audit of the materials they gave their students to read and of the literacy activities they asked of their students. As a consequence of this, and because of changes made by teachers, students reported that the amount of independent reading they were asked to do increased substantially to the point that they expected to undertake reading, independent note-making, and writing activities in almost all classes on a daily basis. In the final focus group meeting students were asked to identify the number of classes where they had read extended text in the previous day. Across the four year levels present, students in Year 9 had read in three classes, students in Years 10 and 11 in four classes, and Year 12 students had read in all of their classes. Similarly, and as a result of the inclusion of the technology and physical education heads of department in the project, those students at School C who were taking these

courses in 2007 reported an increase in the literacy work they undertook outside of English, and the usefulness of the links made by their teachers across these subject areas.

In relation to instruction, students reported differences across all three schools over the course of the project. At School A, students spoke about instruction in how to break text down, how to organise information, and how to read for meaning in English, literacy, and Bible study classes. At School B, students spoke specifically about the instruction they received in how to locate key information in text features and in running text and how to make notes in English, social studies, science, and in geography. At School C students spoke about increased writing instruction in 2006 and reading instruction in 2007. In each instance these students were specific about the approaches they could use, how they helped them as readers, and the ways they could use the skills learned in one content area in their other subjects.

Although attention had been given to the making of links across the curriculum insofar as students could use common reading and writing approaches in a range of curriculum areas, it was at School B where students could discuss literacy demand and literacy learning across the curriculum in some detail. Comments from students included the identification of the specific writing demands in science as compared with geography or English, and of the differences in the way that text had to be approached depending on the purpose for which the reading was necessary.

In large part, the increases in teacher and teacher-researcher understandings and observed teaching practice were mirrored in the students' abilities to discuss their literacy learning and in their literacy achievements as measured in the assessments they undertook. What was clearly apparent across focus groups was that there had been substantial increases in the quantity of independent reading and writing completed across content areas and that there had been numbers of changes in the extent to which students were instructed in, and expected to, make their own notes for specific tasks or as general records of their learning.

The previous part of this section described the changes in teacher knowledge and practice that teacher-researchers revealed through concept maps, interviews, and through observations in their classes. Concurrent with these changes, there have been increases in students' achievements that closely align with the increased knowledge and changed practice. In addition, students have been able to describe how these changed teacher practices have impacted on their thinking and understandings of the role of literacy skills in their learning. Given these changes, we would suggest that the increased achievements as recorded using asTTle are likely to have occurred as outcomes of the interventions described.

# 5. Limitations of the project

While the project has assisted us in identifying ways that growth in teacher knowledge and practice through research partnerships can potentially impact on student achievement, there remain a number of unanswered questions.

The first concern is that although teachers and teacher-researchers changed and grew in their understandings of what constituted effective literacy teaching and learning in their content areas, all participating teachers taught largely from the left-hand column of the scope and sequence chart. There were a number of reasons for this which had not been anticipated at the outset of the project. The first issue was the extent to which we were not prepared for the length of time it would take teachers to develop their literacy knowledge and to begin to apply that to their curriculum area. In hindsight this should not have been surprising given the lack of literacy pedagogical knowledge available to secondary teachers as they train, and given the atheoretical nature of both the New Zealand curriculum documents and previous literacy professional development (see Ministry of Education, 2007).

In addition to the above point and as discussed in more detail in the next section, teacher-researchers not only had to learn about literacy, but they also had to learn about research practice and about effective professional development. For full-time classroom teachers, the learning engaged in, outside of their curriculum areas, was significant and, as has been discussed elsewhere in this report, meant that teachers needed time to acquire, reflect on, and apply new learning before many changes in classroom practice could occur.

While time in and of itself is not precursor of greater success, recognition of the need for time to acquire new learning in the first instance may have led us to revise the design of the study to focus more on teacher learning in the first year. As it was, at the end of Year I the researchers and teacher-researchers were all somewhat despondent at the lack of change in student achievement, and this led us to a rather critical review of our work at that point. While it was important to measure student learning at that point, other data should have been collected regarding teacher learning as a midpoint measure on the way to students' gains.

An altered focus on data, however, would not have assisted in the acquisition by teacher-researchers of the deeper and more complex literacy skills described in the middle and right-hand columns of the scope and sequence chart. To this end, and in order to focus more time on teacher learning, it may have been better for the principal researchers to take a greater lead in the provision of research support in Year I.

A further limitation of this study and arising out of the previously discussed issues is the point that one of our major aims was to test the efficacy of the scope and sequence chart in assisting

students to become independent readers, writers, and problem solvers when confronted with challenging texts and tasks. However, teaching and learning only really occurred in the left-hand column of the scope and sequence chart for the reasons discussed above. What this means is that although we have seen that focussed teaching of the baseline skills on the chart accompanied increases in student achievement, we have yet to know whether the more complex skills described on the scope and sequence chart will take students beyond their current skills such that they enjoy significant success in the senior school. Clearly there is an ongoing research need in relation to this issue.

A number of the teacher-researchers in this project raised concerns about the diminishing potential for ongoing change and innovation in their schools when external support is withdrawn. Teachers and teacher-researchers talked of the value of external support in relation to maintaining their work through the provision of information, research support, data management and analysis, and through the credibility that a project receives when it is associated with external providers and a "research programme". As has been discussed elsewhere in this report, professional development to raise achievement is infrequently successful at the point of delivery. Maintaining and building on gains is therefore even more problematic. Further research into the sustaining of pedagogical changes and growth in student achievement is clearly warranted.

As was noted in the literature search early in this report, for student success, teacher knowledge must be aligned with the belief that students can succeed (Hill & Hawk, 2000). It is worthy of note that across the three schools, students in Year 11 made the greatest growth of any other group of students on asTTle assessments. At this point in their secondary careers, students face NCEA and teachers face the prospect of having to use content-area texts that provide students with the information and experience they need to achieve success. While students in Years 9 and 10 have curriculum goals to meet, there is evidence of the perception amongst teachers that if students "cannot" meet curriculum goals then they should have access to lower-level but more "appropriate" tasks until such time as they are "ready" for more challenging texts and tasks. A possible shortcoming of this study is that while we observed, inquired into, and described teaching practice, we did not audit the materials students had access to. Although speculative, it is our suggestion that Year 9 and 10 students may not have had sufficient access to the challenging materials and tasks that could have led to levels of growth similar to those of their Year 11 counterparts.

At School B, students made the greatest gains in Year II of all other students. At this school, the whole staff participated in professional development, and they developed a range of approaches to literacy instruction that they used across all core content areas. In addition to this, leadership was involved to a greater extent than at the other schools. While it is reasonable to suggest that the gains made by students occurred in large part because of a consistent, crosscurricular focus, the research does alert us to the importance of the role of leadership in the provision of effective professional development. As a result of the nature of the aims and objectives for this project, the active role of leadership in this work was not explored. This is an important area for future research.

In the method section of this report the extent to which the findings from studies can be generalised or transferred to other settings is discussed. Schalock (1995) suggests that the clear articulation of links between the characteristics of the individuals and settings, the work undertaken, and the outcomes achieved is central to any such claim. While we would not argue that clarity of understanding about the backgrounds, beliefs, and practices of the participants; the settings in which they work; and the actions undertaken would assist the reader in identifying the extent to which findings from one study may be applicable to another, we would caution the reader in interpreting the potential for our findings to be achievable in other settings. We worked in three relatively small schools. One of those schools was an integrated school, another was an area school, and the third was located in a small town. To ascertain their wider applicability, these findings could be used to develop an approach that could be trialled in a larger number of schools.

# 6. Contribution of the project to building capability and capacity

In the proposal for this project the principal researchers identified a number of issues considered salient to the strategic, research, and practice value inherent in the project. In essence and in relation to the strategic value of the project we were concerned with identifying a range of approaches that could support the achievement of students who struggle in the secondary system; with describing the role of the teacher in developing students' skills; and in locating those investigations within the context of the secondary classroom.

With respect to the research value of the projects we were concerned with an investigation of the disparities in reading achievement through an analysis of the strategies successful adolescent readers use in their work and the application of that knowledge to strategic instruction for their less successful peers. Central to this study was the concern that literacy instruction was applicable to the content areas and to the lives of the young people as learners in secondary education.

Finally, and in relation to the practice value in the project, we were concerned with the description of the professional development that might lead to increases in student achievement. Our suggestion at the outset of the projects, and central to the focus throughout the project on the development of research partnerships, was that effective professional development is reflective, involves a problem-solving approach, must be research-based, and must engage with teachers in such a way that they become researchers of their own experience and of the evolution of change through the project.

## Strategic value

Many students across the three schools experienced some difficulties with reading at the levels expected of students in New Zealand schools. However, their needs related specifically to the demands of the secondary curriculum. They could all decode but as Delfino (1998) stated, they read word-by-word and without an understanding of the ways they needed to construct meaning according to the reading task or to the content area in which they were reading. The approach taken here in which students were prepared for reading through explicit orientation to the text and through the interrogation of information presented in a range of text forms for a range of purposes (Hall, 2005; Lester, 2000) would appear to have the potential to impact positively on readers in secondary schools.

In relation to the secondary curriculum, Greenleaf (2001) and her colleagues identified the importance of students having access to a wide range of reading materials and to instruction that encourages strategic thinking and the acquisition of the complex skills underlying reading in subject areas. In large part this is what was reported as happening at School B, albeit in ways that did not move students beyond the early stages of the scope and sequence chart. Clearly, however, focused instruction that encouraged students' independent gathering and organisation of information through note making, along with reflection on the processes used to deal with that information, accompanied gains in student achievement. Given that the independent note making across the curriculum advocated at School B did not happen in the same combinations at either of the other schools, and this corresponds with greater asTTle gains at School II than at Schools I and III. This would indicate that independent note making is an important element in developing students' literacy independence.

In addition to opportunities for students to access information independently, it would appear from this project that it is also essential that such opportunities occur across the curriculum (Bryant et al., 1999; Stowell, 2000; Unsworth, 2001). Where this was the case, most notably at School B, gains were greatest.

Central to any gains in student achievement is the practice of teachers: and central to teacher practice is teacher knowledge about the literacy challenges in their content areas (Sturtevant & Linek, 2004; Vacca & Vacca, 2007). In each instance in this project teachers and teacher-researchers focused their work around an interrogation of student assessment and through the lens of research into adolescent literacy. However, in both Schools One and Three, the impact of changed instruction on student achievement could be argued to have been compromised by a lack of engagement on the part of the wider school staffs. At School B not every teacher engaged with the project. However, the involvement of the senior management team with the project appeared to have the effect of ensuring that, even if staff were not committed to the project, they understood that they would be responsible for teaching to meet the literacy demands of their curriculum areas.

Across all cohorts and schools it was noted that in the first year of the projects, student gains were at best, modest. It has been reported, however, that during Year I, teacher-researchers also grappled with developing their own literacy and pedagogical knowledge. While obvious, it is important to note that without a secure understanding of the issues of and practices in raising student literacy achievement (Moje et al., 2000), few changes in that achievement can be expected.

Finally, and in respect of the context of the secondary classroom as a site for literacy learning and inquiry, is the issue of what it is practical for secondary teachers to undertake in relation to literacy teaching without losing the content of their curriculum area (Vacca & Vacca, 2007). And, just what in the way of literacy teaching can lead to changes in achievement? This research suggests that a crosscurricular approach and increasing frequency of literacy activity may have a greater impact than intensity of instruction in one or two curriculum areas only.

# Research value

## Raising student achievement and reducing disparity

It has been noted that despite high levels of achievement, New Zealand students are relatively weak in the literacy skills of planning, monitoring, and regulating their work (Ministry of Education, 2003). More significantly, the ongoing disparity in achievement between our highest and lowest achieving secondary students remains a concern. This study suggests that educational success is open to all secondary learners, that it is possible to introduce students to the literacy learning of a curriculum area without losing the content of that area, and that a key to raising the achievement of our lowest performing students is the analysis of what high-achieving students can tell us about their skills and thinking as successful readers.

The research that led to this project has been reported earlier (McDonald & Thornley, 2004, 2005; Thornley & McDonald, 2005). While a significant outcome of this research was the development of the scope and sequence chart of literacy skills, it had not been trialled to determine its efficacy as a tool for literacy teaching and learning. Nor had there been an investigation as to the extent to which the skills described on the scope and sequence chart fitted into the daily routine of the classroom and students' and teachers' lives.

Given the extent to which the understandings of successful readers informed the development of the scope and sequence chart and given the achievement gains across the three schools, we would contend that there was value in the approach we have taken to this work. It is of further note that these changes occurred despite teachers and teacher-researchers remaining focused more on the baseline skills of the scope and sequence chart, as represented in the left-hand column.

While the projects in each school used the scope and sequence to guide their thinking and teaching, each of the projects was developed based on the needs, constraints and aspirations of the school in which it was based. While tailoring the project to each school's circumstances was seen as an essential element of the development of the partnerships, it would be fair to say that we were not prepared for the variation in results achieved as a result of the peculiarities of each project. In research terms, the differences in the application of the scope and sequence and in the professional development direction taken at the schools are worthy of further investigation.

Many of the teaching and learning opportunities undertaken across the schools were substantially similar. At School B, however, and by virtue of a wider school approach, students began to learn about content literacy (Sturtevant & Linek, 2004; Vacca & Vacca, 2007) and about the ways in which they could learn through reading and writing in their content areas. It would also seem that an important element of this content literacy was the note making students engaged in across content areas that was not a feature of the work in the other schools.

### Teacher–researcher partnerships as professional development

Teacher–researcher partnerships that offer professional learning for teachers and researchers and result in improved student-achievement outcomes are relatively rare (Earl & Katz, 2002). It has been noted that this occurs because professional development fails to take account of what teachers know, their previous learning experiences, and the contexts of their classes and schools (Ball & Cohen, 1999; Putnam & Borko, 1997), and because it fails to consider the contextual circumstances of the teachers, their students, and their schools (Guskey, 2000).

The overall positive student-learning outcomes achieved in this project might then be partially attributed to the ways in which this teacher–researcher partnership was configured to take account of and capitalise on the teachers, and their knowledge and expertise (Cole & Knowles, 1993). As the results demonstrated, the teachers appear to have become willing to use their knowledge and skill, once they realised that there was a genuine expectation that they could make an authentic contribution. In conjunction with this acknowledgement of the teachers' contribution to the project, the principal researchers were aware that failure to take account of the wider context of each project would likely doom the prospects of success.

It is also argued that a central element in the contextualising of professional development is the role of the students within the partnerships. From the beginning of the project, the students were aware of their teachers' and their own involvement and, as the literacy pedagogical approaches were developed and then trialled, they became involved in the evaluation of the teachers' instruction (Kershner, 1999). Beyond this participation, students also contributed to the professional development for the teacher-researchers and the principal researchers through the description of their classroom experiences and school lives as learners facing the multiple demands of curriculum and assessment.

## Practice value

Given the findings in this project it is proffered here that the establishment and maintenance of the TLRI team as a learning community comprising three minor learning communities within each school was shown to promote 'robust change' (Birman et al., 2000), albeit on different scales according to the degree of involvement in each school.

At School B the teacher-researchers comprised the deputy principal, assistant principal, and a teacher. Neither of the other teams included individuals from senior management. At School B literacy had been identified as the major professional learning area for 2006 and 2007, and the deputy principal was responsible for the allocation of resources and for the timing of meetings to ensure this priority was addressed. While collaboration across the wider school was a goal for each of the other projects, the extent to which this could occur was compromised in each instance as a result of the need to negotiate such opportunities with senior management (Lacina, 2006; Oliver, 2005).

The previous points notwithstanding, these collaborations were shown to result in teacher-researchers gaining new crosscurricula understandings and increased depth of knowledge about literacy (Greenleaf et al., 2001). However, the teachers did not develop literacy knowledge from the middle and far-right columns of the scope and sequence chart. The skills from these areas of the chart would enable students to make meaning at deeper levels in unfamiliar texts.

Two related elements are offered here as explanation for this occurrence. The first is the relative unfamiliarity of the teachers with adolescent literacy theories and their largely undeveloped literacy pedagogical knowledge on entry to the project. The second issue affecting change was the research knowledge of teacher-researchers at the outset.

While it would have been possible to simply change the project to account for these learning needs, it was, in the spirit of partnership important to establish the direction for the professional learning in accord with the teacher-researchers' positive response to the project's aims.

As each of the teacher-researchers developed and trialled the research-informed literacy pedagogical approaches based on the scope and sequence chart, they became increasingly eager to involve their colleagues using professional learning approaches that replicated those they believed had been successful for their own learning. Birman et al. (2000) describe the professional development activities of observation, demonstration, coplanning, and joint analysis of student learning as "active learning" opportunities that are most likely to result in changed teacher knowledge.

It is argued here that indeed teacher-researcher knowledge did change, but increased literacy knowledge was only one component of this change. A further outcome of this partnership was that the teacher-researchers' knowledge of research practice and theory was also developed. Like the teachers Greenleaf et al. (2001) describe, the learning for the teacher-researchers was significant, but it fell across the three disparate theoretical and practice domains of adolescent literacy, teacher professional development, and classroom-based research.

In reconsidering the decisions made by the teacher-researchers about the ways in which the project proceeded in each school, the approach that involved their learning about adolescent literacy, professional development, and research methodologies is testament to the teacher-researchers' superior understanding of their own contexts. From their prior knowledge of their own and their colleagues' experiences of literacy professional development, they recognised that issues related to achieving sustainable change for improvement in teaching practice and student learning were in some cases formidable. For this reason, the teacher-researchers believed that they needed to be active on multiple fronts. The first concerned the trialling of the literacy pedagogical approaches that they could use in their classrooms, the second was the work they could do with their colleagues, the third was to ensure that their findings could be disseminated to the wider education audience, and the fourth would be to ensure that the systems and supports in place throughout this project might, where possible, be in place for the future.

The teacher-researchers almost unanimously held concerns about how they might maintain their progress of change and improved literacy teaching practices without some degree of “external” expertise in the future. Equally, the principal researchers cannot hope to extend their understandings or produce new and innovative research without teachers and students who are as willing to become research partners as those with whom they have worked in this partnership.

# 7. Conclusions

This project was designed as a response to the literacy struggles that many adolescent students encounter as they face the demands of the secondary school curriculum with few effective strategies for curriculum and assessment success (Flockton & Crooks, 2001, 2002; Ministry of Education, 2003). We were aware that the instruction that many students received in the earlier years of their schooling had not equipped them to undertake complex tasks using increasingly sophisticated texts on unfamiliar topics (Christie, 1998; Ivey & Broaddus, 2000). Furthermore, the instruction that adolescents subsequently receive in secondary schools often fails to take account of their existing literacy knowledge and practice or the ways in which they will need to be literate as adults in the 21st century (Moore et al., 1999).

At this time when the school curriculum has become more text orientated (Unsworth, 2001), statistics indicate wide disparities in the literacy achievement of students in the early years of secondary school (Flockton & Crooks, 2001; Greenleaf et al., 2001; McDonald & Thornley, 2005; Ministry of Education, 2003). Not surprisingly, teachers commonly report that the learning of many of their students is severely hampered as they fail to make sense of the new material they read in a number of their curriculum areas (Hall, 2005; Lester, 2000; Stowell, 2000; Unsworth, 2001).

To address this situation, teachers across the subject areas are encouraged to assume a collective responsibility to undertake professional learning that can support them to infuse appropriate literacy instruction into their teaching, where there are authentic literacy demands inherent in the curriculum of their subjects (Darwin & Fleischman, 2005; Hall, 2005; Vacca & Vacca, 2007). While having strong content knowledge has been shown to be a determinant of effective teaching, teachers who also have literacy content and pedagogical knowledge appear to have a greater impact on their students' success (Sturtevant & Linek, 2004; Vacca & Vacca, 2007).

Given the extent of the need to improve teachers' literacy knowledge in secondary schools, an approach that could potentially lead to sustainable improvement was desirable. Given also the likelihood that approaches that do not take account of the teacher as individual learner would not result in improved teaching or learning, then collaborative partnerships seemed desirable (Cole & Knowles, 1993; Corden, 2002; Goodnough, 2004; Graetz et al., 2004). From this two-year research-as-professional-development project between the teachers and us as researchers, we wish to make the following concluding comments that highlight our key learning:

1. The project revealed the importance of teachers having the opportunity to interrogate the research on adolescent literacy, literacy pedagogical knowledge, and literacy assessment. This was shown to be a necessary precursor to the development of relevant teaching approaches and pedagogical change. As part of this process, the teacher-researchers required a range of professional learning experiences through which they could read, discuss, and reflect on the research as an informant for changed classroom practice.

2. The scope and sequence chart (McDonald and Thornley, 2005), developed with reference to a range of research sources, and the New Zealand curriculum and assessment standards (Flockton & Crooks, 2001, 2002; Ministry of Education, 2003), represented a common theoretical position through which curriculum and instruction could be discussed. Furthermore, it provided the basis from which instructional approaches could be developed, trialled, and reviewed. The literacy skills as described on the scope and sequence chart were adapted for use across a range of curriculum areas and to accelerate student achievement. While the skills are organised with respect to their complexity, even where instruction focuses on the least complex of these skills, students became more knowledgeable and skilful when reading a range of texts.

3. The collaborative partnerships (Cole & Knowles, 1993), as negotiated and developed between the principal researchers and the teacher-researchers, were reliant on the understanding that all participants brought expertise to the project. It was observed that as the teacher-researchers understood that the partnership was directly linked to the immediacy of their classroom (Lacina, 2006) and would also function as a learning opportunity for the principal researchers, the shift from a co-operative partnership to collaboration commenced.

   Beyond the change in dynamics that occurred within the group as a result of changed beliefs concerning the participants' role, the teacher-researchers' changed knowledge as an outcome of the professional learning about adolescent literacy contributed to the manner in which they participated within the group. Similarly, the professional learning about research theory and practice impacted on the increased decision making by the teacher-researchers.

   We believed that as principal researchers, our expertise in the domains of adolescent literacy and research practice was a defining factor of our role (Berger et al., 2005). However, in a collaborative partnership, we needed to understand and adhere to the processes of negotiation (Cole & Knowles, 1993; Goodnough, 2004; Graetz et al., 2004) that could foster changed roles and responsibilities to increasingly position teachers as researchers in their actions, knowledge, and understandings. Failure to renegotiate these roles could have resulted in the perpetuation of status quo practices; that is, the principal researchers' remaining in control of the research (Cousins & Simon, 1996) and the teachers acting and thinking solely as practitioners (Kemmis & McTaggart, 2005).

4. The teacher-researcher partnership was predicated on a view of secondary school teachers as individual learners working within diverse school and curriculum contexts. Teacher professional learning opportunities that are informed by research and responsive to teachers'

contexts and needs were affirmed in this project as effective vehicles for change. The pedagogical change occurred as teachers' literacy knowledge increased, facilitating the development, trial, and adaptation of instructional approaches that assisted students to engage with the texts they read, clarifying, processing, evaluating, and using the information (Norrie & Lenski, 1998).

5. Students across all of the project schools made gains in their learning despite the fact that teachers did not move in their teaching beyond the left-hand column of the scope and sequence chart. In many instances these gains were significant and they aligned with the gains and the timing of the gains their teachers made in terms of their learning and practice. While some of the conditions for improving student achievement (such as increasing the amount of access students have to reading in extended text) are relatively obvious, others were not. In general, though, and as a result of the changes in student achievement identified here, we would argue that there are a set of generic approaches to literacy that teachers can take with students across the content areas that will result in increased achievement. This being the case, a generic approach to literacy instruction should have the following components:
    - frequent access to curriculum and year-level-appropriate extended text across the curriculum
    - an orientation to a text through an analysis of the intentions behind an author's writing in a particular text form and a review of key ideas as conveyed through the text features
    - analysis of the components of a task to set up independent note making
    - teacher questioning that focuses on the process of gathering information
    - consistency in the approach to text across content areas.

6. The role of leadership in the identification, application and integration of professional learning into a school's psyche is central to its success. In the work of the projects in schools, leadership occurred on a number of levels. In the first instance and within each project team one of the teacher-researchers took or was given a leadership role. This role included acting as a link between the researchers and teacher-researchers and between the project and school leadership. At a second level, collegial leadership provided drive and forward movement for each of the projects within each school (Poulson & Avramidis, 2003; Taylor et al., 2005).

    In our work, we have also seen the importance of the role of senior management in the projects. In our experience the "driver" for professional learning did not have to be the principal (Lacina, 2006; Oliver, 2005), but it did most definitely have to be a person or people who could establish a means for the embedding of the knowledge gained within the culture of a school, and who could make decisions about direction, resourcing and organisation (Oliver, 2005).

7. The learning of the teacher-researchers and principal researchers was predicated on, and guided by the experiences, aspirations, and understandings of students as identified through a range of assessment and information-gathering tools. From the analysis and interpretation of this data, the instructional approaches and literacy content were evaluated and refined. For

each of us, the findings of the project challenged our existing theories of practice, caused us to scrutinise our assumptions, and enabled us to develop new understandings (Graetz et al., 2004; Robinson & Lai, 2006).

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# Appendices

# Appendix A: Teacher-researcher interview schedule

How do you define

- partnership?
- collaboration?
- inquiry?
- research within the TLRI?

How are these things played out in the TLRI in your school?

Partnership

How would you describe the TLRI partnership that you are involved in?

- How do you see the partnership/professional learning communities/research groups as operating?

Could you describe your role within the partnership?

- What responsibilities have you had?
- To what extent have you been involved in planning the research process?
- In what ways have you been supported to fulfil this role?

How would you describe the relationships within the partnership?

- relationships with other teacher-researchers from your and other schools.
  - What has supported / facilitated the development of the relationship?
  - In what ways have other teacher-researchers supported you?
- relationships with researchers
  - could you comment on the roles of the researchers?

What things do you see as being important to the partnership functioning effectively?

- useful processes?

What do you think you/teachers need to know/understand to be research partners?

Research

How would you describe/define the research that your TLRI partnership is involved in?

Have your ideas about research changed over the time you have been involved in TLRI? In what ways?

How have you developed as a researcher?

- Your knowledge about research/research skills?
- Your knowledge/understandings of data?
- What have you learnt about doing research?
- How have you learnt about doing research?
- Have you been involved in any other formal study/research outside of the TLRI?
    - Has this impacted on your experiences of the TLRI project and vice versa?
- What has supported you in the process?

How do you feel about presenting/sharing the results of your research?

How comfortable do you feel about continuing with research once the TLRI project is finished?

Professional development

Could you describe the professional development component of the partnership?

- Could you comment on the roles of the researchers as professional development providers?
- What professional development approaches have been useful? In what ways?

Teaching

How would you describe yourself as a teacher?

Have you always described yourself in these ways?

Would you see yourself as a collaborative teacher?

How is this played out in your work as a teacher?

How have you changed as a teacher as a result of the TLRI?

- content knowledge
- teaching practice
- ideas about teaching and learning

What has brought about those changes?/Why do you think this work may have failed to stimulate your thinking about teaching?

School

Can you describe the culture of your school?

How would you describe the research in relation to the school?

- How has the school supported the research partnership?
- Could you comment on the role of the principal in relation to the research partnership?
- Do you discuss the research with other teachers in your school who are not directly involved in it?
- Will you share findings from the research with the wider staff?
- Do you discuss the research with students?
- How do you see the research as impacting on the school?

Has there been any impact on the wider school of the TLRI?

- What has supported/inhibited this spread?
- What do you think causes teachers to maintain their current practices in the face of projects like the TLRI?

Outcomes

Students

How would you describe the role you want students to take in their learning?

How would you describe student outcomes?

- What do you see as constituting student achievement?
- How have your ideas about student achievement data changed through the TLRI project?

In what ways has the research impacted on these outcomes?

Do you see the research as impacting on the wider knowledge base of adolescent literacy? In what ways?

What other impacts do you see the research groups as having?

# Appendix B: Principal interview schedule

How do you define

- partnership?
- collaboration?
- inquiry?
- research within the TLRI?

How are these things played out in the TLRI in your school?

How would you describe the TLRI partnership that your school is involved in?

- How do you see the partnership/professional learning communities/research groups as operating?
- What things do you see as being important to the partnership functioning effectively?

How would you describe the research that the TLRI partnership is involved in?

Have your ideas about research changed over the time that your school has been involved in the TLRI? In what ways?

School

Can you describe the culture of your school?

How would you describe the research in relation to the school?

- How has the school supported the research partnership?
- Could you comment on your role in relation to the research partnership?
  - Have you mandated the research in any way?
  - Are teachers provided with incentives to participate in the research?
- Are the teacher-researchers encouraged to share the research with other teachers in your school who are not directly involved in it?
  - In what ways?
- Are the teacher-researchers encouraged to share the research with students?

How do you see the research as impacting on the school?

- Has there been any impact on the wider school of the TLRI?
    - on the wider knowledge base of adolescent literacy within the school?
    - Professional development culture?
- What has supported/inhibited this spread?
- What do you think causes teachers to maintain their current practices in the face of projects like TLRI?

Do you see research practices/partnerships continuing within the school once the TLRI project is finished?

- In what ways?
- What do you see as being important to building research capability within the school?

Outcomes

Teachers

How do you see the research partnership as impacting on teacher-researchers?

- knowledge base
- classroom practice
- research capability

How do you see the research partnership as impacting on teachers who have not been directly involved in the research?

Students

In what ways has the research impacted on students? How have you measured these impacts?

Are there any other impacts that you see the research partnership as having?