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Raising reading achievement in an 'at risk', low socioeconomic, multicultural intermediate school

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This article focuses on a multicultural, low socioeconomic, intermediate school that over the 4 years of this longitudinal, qualitative, case study made substantial positive shifts in developing a more effective learning environment and improving students' reading achievement. The study found that the factors appearing to have the most influence on this improvement were: effective and collaborative school leadership; ongoing school-wide professional development on teaching reading led by an externally appointed literacy expert; the appointment, within the school, of a literacy leader charged with supporting this development; assessment data being used to inform teaching and a school-wide action plan directed at literacy improvement; the implementation of reading programmes that were regular, focused and sustained; the school leadership proactively ensuring school-wide support for management of appropriate student behaviour; the fostering of home–school partnerships; and ongoing external reviews of school effectiveness.

The research reported in this article draws on a longitudinal case study of a previously 'at risk', multicultural, intermediate school (Years 7–8) in a low socioeconomic area of a New Zealand city. The study responds to Freebody's (2009) call for more research on reading literacy acquisition and development in the middle (and upper) years of primary schooling, given that much of the extant literature about reading development focuses on the early years of schooling. What we document here follows on from earlier publications and conference presentations (Fletcher, Greenwood & Parkhill, 2010; Fletcher, Parkhill, Fa'afoi & Taleni, 2006; Fletcher, Parkhill, Greenwood, Grimley & Bridges, 2008; Fletcher, Parkhill, Taleni, Fa'afoi & O'Regan, 2009; Greenwood, Fletcher, Parkhill & Grimley, 2009; Greenwood, Fletcher, Parkhill, Grimley & Bridges, 2009b).

In order to better appreciate the conditions under which children can improve their reading during the final 2 years of primary schooling (the period typically accommodating 11- to 13-year-olds), we are exploring not only the explicit skills a competent reader needs at this school level, but also considering the wider school and community structures that support and enhance reading (Foster, 2004; San Antonio, 2008). We were particularly interested in the aforementioned case study school with regard to this aim because of its dramatic turnaround from being a school whose leadership, teaching,

student management and achievement were under review by the Education Review Office (ERO) – an organisation analogous to an inspectorate – to one making significant positive shifts in respect of all these matters in general and in student achievement in particular.[1]

More specifically, we wanted to consider a special interest born of Foster's (2004) and Heck and Hallinger's (1999) challenge to researchers on exploring how school leaders and other school members build and maintain successful school learning environments. This interest was the influence of the school's leadership on the wider school systems.

Literature review

Given that our interest in this study was to identify and examine the interrelating factors that influence the reading achievement of 11- to 13-year-old students, we were intent on framing our study according to where the learner is viewed within wider socially situated contexts (Bronfenbrenner, 1979; Cole, 1996). As Cullen (2002) points out, students are best able to construct meaning within socially constructed interactions that offer them experiences they find authentic and meaningful. An approach to literacy viewed from a sociocultural and social-constructivist perspective posits that when students' respective cultures and family backgrounds align with the culture of their schools and their teachers, students are more likely to succeed (Grenfell, 2009).

Literacy learning and development

Reading acquisition. A social constructivist view positions reading acquisition as a process constructed in the social world (Cullen, 2002). Vygotsky's (1978) work is integral to this type of theoretical perspective, in particular his identification of the zone of proximal development where explicit teaching and collaboration with and by peers and teachers are essential to the development of new understandings. Vygotsky proposes that learners' immersion in the social milieu – interpsychological – is necessary before anything (learning, understanding) can materialise in the human brain – the intra-psychological (Grenfell, 2009). In educational terms, the co-construction of knowledge occurs with the equal participation of the learner and the teacher (Cullen, 2002), allowing learners to negotiate their own understandings between their own worlds and those of the wider social and physical worlds (Grenfell, 2009).

Comprehension of text. This relies on repeated interactions with texts that allow learners to debate and interpret what they are reading from different perspectives (Paris, 2009; Paris, Carpenter, Paris & Hamilton, 2005). When discussing reading acquisition in the middle and upper years of primary schooling, Pearson (2009a) emphasises that effective readers – those able to comprehend and interpret what they are reading – typically have at hand a full set of strategies that allow them to comprehend, decode words and develop vocabulary knowledge. Pearson argues that all approaches taken to help readers comprehend need to be underpinned by what he terms 'commonalities', namely:

> a commitment to reading as the construction of meaning in response to text; a dynamic view of the teacher involving roles as one who moves from modelling and explicit teaching, to scaffolding and coaching, to facilitating and participating as

> students develop greater competence, confidence and independence; and a general commitment to student rather than teacher centred practices (Pearson, 2009b, p. 24).

According to McNamara, Miller and Bransford (1991), readers develop and rely on mental models when comprehending text. Each reader builds a working mental model that contains information applicable to and descriptive of a given situation and adapts it when encountering new information and situations within the text. Pearson (2009b) concurs. These models, he claims, are sensitive to the subtle changes to readers' comprehension focus relative to the text, such as when readers take their hypothesis that one character is the protagonist and apply it to another character.

Attitudes to reading. Several theorists set students' attitudes to reading and motivation to read for enjoyment as another critical component of successful learning to read (Chamberlain, 2007; Cremin, Mottram, Collins, Powell & Safford, 2009; Crooks, Smith & Flockton, 2009; Twist, Gnaldi, Schagen & Morrison, 2004; Twist, Schagen & Hodgson, 2007). Pressley (2002, p. 372) refers to academic motivation as a 'fragile commodity'. Young children, he says, enter school motivated to learn but often by Grades 5 and 6 are much less confident of their ability to meet the academic expectations of their teachers and parents.

Positive links are evident between students who are motivated to read and spend time reading for pleasure and reading achievement (Chamberlain, 2007, 2008; Twist et al., 2007). For example, the New Zealand data from the 2006 iteration of the international Progress in Reading Literacy Study (PIRLS) showed that 10-year-old New Zealand students who reported reading for fun at least once or twice a week generally achieved higher reading scores (Chamberlain, 2007). Sainsbury and Schagen (2004) suggest that the decline in reading for enjoyment is, in part, a product of social and technological changes in society. Sainsbury and Schagen also join with other colleagues (Twist et al., 2004) to argue that the decline in reading for pleasure may be a long-term phenomenon that is resistant to teacher interventions.

A growing body of research evidence worldwide (Brozo, 2005; Hattie, 2007; Hirsch, 2003; McNaughton, Lai, MacDonald & Farry, 2004; RAND Reading Study Group, 2002) notes that reading progress, particularly in regard to comprehension, plateaus or slumps as students move through the middle school years during which they are required to read and comprehend more advanced texts. This research evidence also indicates that reading is generally neither methodically nor consistently taught at this level of schooling.

According to Everatt (2009), students with reading difficulties encounter flow-on consequences when they enter secondary school. These encompass behavioural problems, esteem issues and low success rates in examinations. The authors of the *Reading for Understanding* report (RAND Reading Study Group, 2002) from the US point to the negative impact of this deficit on students' engagement with and learning of most other subject areas. This situation often leads to a spiral of failure, disengagement with schooling, lowering of self-esteem and limited long-term educational outcomes and life aspirations (Chharbra & McCardle, 2004; Sticht, 2001).

The role of teachers and educational leaders. Gavelek and Bresnahan (2009), arguing from a social-constructivist perspective, claim that effective teachers of literacy are those who have certain attributes ranging from sound content and pedagogical knowledge to ability to use assessment in order to guide instruction that incorporates both culturally appropriate practices and strategic processes of instruction. In line with this thinking, Davis (2007) argues that three interlocking factors influence student achievement in

reading. First, teachers need to have a strong pedagogical knowledge of reading development. Second, they need to have explicit knowledge of the needs of their students. And third, they need a repertoire of informed instructional practices.

In their meta-analysis of 91 research syntheses and interviews with 61 educational researchers, Wang, Haertel and Walberg (1994) identified classroom management as the top factor of 27 influencing student learning. As Bronfenbrenner (1979, 2005) highlights, providing a school environment where there is effective classroom management involves school leaders working closely with all staff in the school and developing connected networks with parents.

Cole (1996) and Henze and Arriaza (2006), who consider student learning from a sociocultural perspective, point out that because school leaders are not separate identities but are embedded within wider social and cultural contexts, the political realities of society impact on their decision-making and implementation of educational policy and programmes within the school environment (Gordon & Patterson, 2006; Strike, 1999). Shields and Sayani (2005) propose that effective principals cater for students and teachers within the school environment in a way that gives them confidence that the school is a safe space within which to teach and learn, where each person is respected and valued, and where each has a feeling of belonging (see also Day, 2005; Moos, Krejsler & Kofod, 2008). When teachers are in a school where they collectively believe they have the potential to positively influence student achievement, they are more likely to confront challenging situations and persist in raising student achievement (Goddard, Hoy & Hoy, 2000).

Gavelek and Bresnahan (2009) argue that communities of effective literacy practice rely not only on teachers and students together negotiating meanings in relation to why and how that practice occurs, but also on teachers negotiating these meanings through the forum of sustained and frequent professional development facilitated by instructional leaders. Several commentators (Drago-Severson & Pinto, 2006; Fisher & Frey, 2007; RAND Reading Study Group, 2002; Timperley, Wilson, Barrar & Fung, 2007) claim that professional development programmes that effectively raise achievement occur over relatively long periods of time, have all staff collaboratively contributing to and partaking in school-wide plans for improvement, have extensive investments of time and capital, and offer teachers sound theoretical understandings on the subject matter under consideration.

According to Denscombe (2002, 2003), research directed at documenting *why* a school, such as the one that features in our study, initiates a professional development to change its culture to one likely to improve student achievement, and *why* it succeeds or fails in achieving this goal, can help us understand the ecology of a school-based phenomenon, such as the attainment of reading literacy. This thinking accorded with the overarching aim of our case action research study – that of seeking out the eco-systemic cultural factors associated with the case study school's success in raising the reading literacy achievement of its students. We hoped that our research would not only tell the story of *what* had happened and draw out the core elements of the phenomenon, but also allow us to find out *why* the school was now succeeding in improving reading outcomes.

Method

Our data collection, methods of analysis and reporting were all informed by a case-oriented action research approach (Bassey, 2007; Bogdan & Bicklen, 1998) in which the case is situated centre stage (Ragin, 1992). The study comprised three distinct research

investigations that took place across a period of 5 years at East Park Intermediate School, a Decile 2[2] state school set in a low socioeconomic area of a city on the east coast of the South Island of New Zealand. The school's ethnic composition at the time we began our study was New Zealand European (54%), Maori (27%); Pasifika[3] (12%) and other (7%). All three investigations were focused on gaining a better understanding of the conditions influencing Year 7 and 8 students' reading achievement.

We took a case-based approach because we considered this was the method that would best allow us to explore the complex interweaving of those aspects and conditions impacting on the different systems within which students, as developing readers, are situated. Case study also has the advantage of providing rich detail and insight into many co-occurring factors and events and of providing understandings informed more by interpretations of qualitative data than of quantitative data (Neuman, 2003).

Investigation stages

Stage 1 (2005). Because East Park Intermediate School has a relatively high proportion of Pasifika students and because Pasifika students tend to be overrepresented in the lower levels of educational achievement, including reading literacy (Crooks et al., 2009; Wylie & Hodgen, 2007), we were interested in gathering the views of the Pasifika students, their teachers and the school community on literacy learning. We conducted, on three separate occasions, focus group interviews of 19 Pasifika Year 7 and Year 8 students whom their teachers had identified as underachieving in reading. A research assistant scribed the conversations at these sessions. A limitation of using this method was that not all dialogue could be easily captured. We also conducted a focus group interview of about 1 hour's duration at the school with the parents, stakeholders and teachers. Again, what was said was recorded as written notes.

Questions asked of the children early in the interviews included: 'What helped you to become readers/writers?' 'Where did you get your ideas for writing from?' Some children were more forthcoming than others, but with encouragement, more children contributed orally. In the final session, we divided the children into smaller groups to help encourage the more reticent children to contribute. Their comments were then shared orally back to the whole focus group to allow further dialogue.

Stage 2 (2007). During this stage, two teachers and the newly appointed principal of East Park Intermediate School agreed to participate in a focus group interview, part of which asked specifically about the Pasifika students in the school. The questions that we asked guided rather than directed the interview. Our aim was to facilitate a session that did not limit the talk to a predetermined agenda (Rapley, 2007), so allowing for the unexpected and for the reality of the interviewees' contexts to be part of their commentary. To start the dialogue, we asked such questions as: 'What are the supports in place at your school for students?' 'What barriers do you believe Pasifika students encounter in their literacy learning and learning in general?' The interview took approximately 1 hour and was audiotaped and later transcribed. A research assistant also made written notes.

Stage 3 (2008/2009). This stage of the study was conducted during 2008 and 2009. It involved two of us conducting interviews with the school's principal, literacy leader, a Years 7–8 teacher, three Years 7–8 students and two parents. We also observed an instructional reading lesson. And at the end of the year, we collected the standardised reading achievement data for all Year 7 and Year 8 students at the school.

During the interviews, one of us led the questioning and the other took notes. We used a schedule of questions specific to the different roles of the research participants. Each interview took approximately 30–40 minutes to complete. We interviewed all but the three children separately. We considered the children, faced with two researchers, would feel more comfortable being interviewed together as a focus group. All interviews were audiotaped and later transcribed.

Both of us observed the Years 7–8 teacher take an instructional reading lesson. The teacher had been designated by the principal and had agreed to be interviewed and observed teaching. One of us completed the observational survey while the other took notes.

The achievement data that we obtained at the end of 2009 were the students' scores on the Supplementary Tests of Achievement in Reading (STAR) (Elley, 2001). STAR is a norm-referenced, New Zealand contextualised assessment tool that measures the wide range of reading skills that children are expected to acquire during the different levels of their schooling. STAR stanines are used to compare individual students' achievement in aspects of reading with the achievement of a like cohort. A stanine score of 1 is the lowest score. Scores of 2 and 3 denote below average, 4, 5 and 6 denote average, 7 and 8 indicate above average and 9 represents outstanding achievement.

We had wanted to use reading achievement data extending back over several years, but when Robert, the school's new principal, checked school records for such data before 2008, he considered it to be 'weak and lacking reliability'; only some children within year intakes had been tested. He consequently recommended that we use only the 2008 and 2009 data on the Year 7 and Year 8 students' reading achievement.

Finally, we sent the penultimate draft of this research article to the school's principal for comment and feedback. However, none was given.

Data analysis

The design of a research study is driven by its purpose; this influences from whom the data will be collected and how the data will be collected and analysed (Punch, 2009). This research was about understanding a phenomenon and identifying the actions and interactions in the case study (Strauss & Corbin, 1990). The objective of our research was to identify the conditions potentially influencing the central phenomenon, the context in which it occurs and how it is managed and handled (Punch, 2009).

Because our longitudinal research at East Park School evolved out of three separate studies, our analysis of the data from Stages 1 and 2 to some extent informed Stage 3 in regards to helping determine what we would research. For example, in Stage 3 we decided not to limit our exploration to Pasifika students, but to try to better understand what was happening for all students at East Park. After gathering the data for Stage 3, we revisited the earlier research data from Stages 1 and 2 with the aim of re-analysing this information. However, after discussion, we decided that because we did not want to disturb the Stage 3 setting in any way, or set out to disprove or prove a hypothesis by searching for facts to support a position at this time (Burns, 1998), we would not code the earlier data until we had completed a more thorough analysis of Stage 3 as described below.

While we were collecting the Stage 3 data, we began to get 'a feel', through preliminary (*initial*) code-based analysis, of our earlier collected data (Punch, 2009). This early work assisted us, on completion of the full data collection, to refine our early coding relative to the research questions, relevant literature and the theoretical underpinnings of

our research approach (Harry, Klinger & Sturges, 2005). Because the codes that we developed tended to be descriptive, requiring minimal or no inference beyond the portion of data being examined (Punch, 2009), we were able to fit codes to data with good precision, a process that eventually led to the development of 13 coding categories (Fraenkel & Wallen, 2006; Harry et al., 2005).

Using these categories as a guide, we scanned the overall data for patterns and discrepancies. Although we did not reference grounded theory as such in our research strategy, we did employ analysis processes used in grounded theory (Charmaz, 2003; Strauss & Corbin, 1990). Open/initial coding, axial coding and selective coding strategies provided us with a model of systematic inquiry where the data could be compared (Punch, 2009). At this stage of our research, the open coding helped 'break open' the data to identify some of the conceptual categories within the data (Punch, 2009).

Having completed this 'initial coding phase' (Charmaz, 2003), we moved beyond the developing emergent codes and began to generate provisional labels. These labels became our first level of inference. As we read and reread the data, it became apparent that while each subgroup of interviewees (principal, literacy leader, teacher, parents and students) could be assigned similar codes, each group needed to be accorded its own category so that we could continue analysing the data from the subgroups on both an individual and collective basis in order to gain maximum understanding of the phenomenon (Marton & Booth, 1997). Next, an independent research assistant analysed and segmented the transcript data. We then compared her categories against our initial codings, a process that resulted in our refining, deleting and adding codes across the subgroups of participants. For example, we added two codes to those already determined for the principal and literacy leader. These were 'helping teachers improve their practice' and 'challenges and barriers'.

Our next step involved *axial coding* of the interview transcripts from the case study schools (Neuman, 2003). Axial coding, unlike open coding, which breaks the data open, provides a means of making connections across and between segments of data (Punch, 2009; Strauss & Corbin, 1990). Axes are put through data signalled by the coded categories as linked. This process, which Charmaz (2003, p. 260) describes as 'making connections between a category and its subcategories', provides a denser web of support for emerging key ideas within the qualitative data (Neuman, 2003). More prosaically, our axial coding involved re-analysing the original transcripts against the research assistant's segmented data for each school to identify connections. As an example of an outcome of this process, we found a connection between our initial categories of 'challenges and supports' and 'helping teachers improve their practice'. The connection related to Ministry of Education funding being used, in response to concerns expressed in the ERO review of East Park School, to procure extra teaching support for the school and appoint a part-time literacy leader. This link contributed to the cluster of findings that supported our emerging understanding of the role that external agencies were playing with respect to supporting the school.

In order to *triangulate* the data, we asked another researcher who had been part of the interview team to independently analyse the transcripts to identify codes. She looked for similarities and differences across the subgroups of interviewees and then reviewed the coded data from the research assistant to identify differences. We then looked at the patterns that had emerged from the triangulated round of data analysis, noting and discussing any discrepancies across the three independent analyses. Together, we decided whether these needed to be considered as part of the findings.

Additional triangulation occurred when we examined the perceptions and opinions of the different subgroups of interviewees. For example, by comparing what the teacher and the students perceived as supporting student reading, we gained a better understanding of the interrelationships and interface between teacher and students.

According to Neuman (2003), researchers are ready for the final pass through the data when they have identified the major themes to emerge from the research data. At this stage, selective or focused coding is used to scan the data and prior codes in order to organise the overall analysis around several core ideas (Charmaz, 2003; Strauss & Corbin, 1990). During this process of selective coding, the concepts and codes that frequently appeared during the earlier stages tend to reappear but are refined through more precise categorisation, with the latter then being tested against the emerging explanatory framework (Charmaz, 2003; Neuman, 2003).

Findings and discussion

In this section, we organise our findings according to the three stages of the longitudinal study. The data presented in the first two stages are qualitative; the data in Stage 3 are qualitative and quantitative. This material is followed by a summative account and description of the factors that appeared to have influenced students' reading achievement. Table 1 provides a summary account of when, during these stages, changes to the school leadership and other school events occurred that appeared to have a marked impact on the ecology of the school.

Stage 1 (2005)

Two years before we commenced our study, East Park's school roll had been 264. By the time we began our research in mid-2005, the number of students enrolled had dropped to 149. The drop was partly caused by parents deciding to send their children to other schools in the area, a decision that may have been due to dissatisfaction with the teaching quality at the school. The poor quality was signalled by the fact that ERO had conducted reviews of the school in 2003, 2004 and 2005, even though ERO typically reviews a school only once every 3 years. The authors of the 2005 review echoed the commentary of the earlier two reports:

> The 2004 ERO Supplementary Review report on [East Park] Intermediate school followed an Education Review report confirmed in October 2003, where significant concerns had been identified. The 2004 report noted ... the need to improve the quality of curriculum planning and assessment, monitoring and self review, Maori student achievement ... Since term 1 2004, a commissioner[4] has taken responsibility for the governance of the school ... Challenging targets have been set by the commissioner in an attempt to lift student achievement in the areas of literacy and numeracy but there are no clear action plans in place to provide any assurance such targets will be achieved ... Serious concerns still exist at the school ... The ERO report of 2003 raised the issue of variable teaching quality. The 2004 ERO report acknowledged changes but was unable to affirm that sustainable progress had been made to improve the achievement of students (http://www.ero.govt.nz/ero/reppub.nsf/).

Table 1. Timeline of events at East Park School during case study investigation.

Research stages	Leadership	Other events impacting on the school	Wider systems impacting on the classroom
Stage 1, 2005	Principal resigns and temporary principal appointed by Ministry of Education	Commissioner appointed to school	National Ministry of Education
2006	Temporary principal continues in role		
Stage 2, 2007	New principal appointed and takes up position in October	Enhanced Programme Funding begins (NZ$45,000 for period of 2007–2009)	National Ministry of Education
Stage 3, 2008	Principal continues	Enhancing High Standards (EHSAS) funding begins for cluster of schools (NZ$250,000 over 4 years)	National Ministry of Education School
		External literacy consultant begins whole-school professional development in cluster of schools	District and school
		Literacy leader appointed to school	School
		Supplementary Tests of Achievement in Reading (STAR) reading testing used school-wide to provide accurate detailed data	School
		In-class observations and modelling of reading by external literacy consultant	School
2009	Principal continues	Continuation of above strategies	

The 2005 review identified some areas of improvement but the future action was to review the school again in 2006. Towards the end of 2005, the principal resigned and the Ministry of Education appointed a temporary principal.

During our interviews with the Pasifika students, the children said they were reluctant to work in their home classrooms because of the negative behaviours of other children and because of the perceived inability of their classroom teachers to implement effective management strategies. They expressed concern about noisy classroom environments: ‘People talk too much and we can’t concentrate’. (Year 7 student). ‘My class is too noisy. I need a quiet room to do my writing’. (Year 8 student). The children indicated that this lack of effective management strategies by teachers was hampering their learning.

Problems with student behaviour and class management were further confirmed when a teacher, Jonathon, in his first years of teaching, shared his frustration at trying to manage the behaviour of several ‘difficult’ children. It was only when Jonathon handed in his resignation that he was offered external support to try to solve the management problems in his class. However, by this stage, he had resolved to leave the teaching profession. When a beginning teacher is in a school with a school-wide management problem,

such as that indicated by the ERO reports at East Park, he or she is unlikely to be able to rectify this endemic problem alone. Support from the school principal and the senior management team is generally needed to address and overcome this type of systemic difficulty.

Stage 2 (2007)

During the second part of our case study research, Robert had just been appointed to the principalship of East Park. He had come from a deputy principalship at a large city-based multicultural secondary school in the same low socioeconomic area as East Park. At this school, he had held leadership responsibility for supporting Pasifika students and had taken a lead in supporting a school-wide literacy professional development that had helped raise the overall literacy achievement of the school's students. When talking about this, Robert said:

> We've moved on from the silver bullet notion of one magic technique that you apply . . . and are getting far more sophisticated around the fact that there are a lot more different practices that exist . . . The school has actually, for the last two or three years, had a school-wide literacy project . . . It's a very, very strong and positive learning programme.

Robert was thus well positioned to use this experience in his new school. For many years, commentators have advocated that school leaders need to be at the centre of school developments. In particular, they need to be more involved in the fundamental issues of curriculum and pedagogy, to ensure that any changes made are those most likely to improve learning outcomes, including those relating to reading literacy, for all students (see, e.g., Stewart & Prebble, 1993).

Researchers and organisations (see, e.g., New Zealand Ministry of Education, 2003; Wylie & Hodgen, 2007) make similar points when they argue that not only teachers but also parents are influential in improving children's reading. Ortiz and Ordonez-Jasis (2005) stress that the teacher's role in facilitating parental involvement in children's reading development is crucial. One of the teachers at East Park explained how she was encouraging parents, particularly Pasifika and Maori parents, to be part of the school community.

> I rang all the parents. We have cultural evenings at school to get parents involved. It's an informal setting. We try to get the parents into the school again in non-threatening ways.

As Fletcher et al. (2009) found, teachers can be challenged by the need to find appropriate ways of helping parents from diverse ethnic groups understand how they can support their children's reading. However, Fletcher and her colleagues also found that measures that draw such parents into the school community and give them ownership of it set up situations in which teachers and parents act as partners in enhancing children's reading achievement. When schools and families interact and provide feedback, they can better support children's learning.

Stage 3 (2008/2009)

In 2008, ERO reviewed East Park once again and noted that the school had made very good progress in implementing recommendations from the 2006 review. The 2008 review authors stated:

> The board set student achievement targets in 2007 in reading, numeracy and the essential skills. The target set high expectations for improvement. The principal's initial analysis of 2007 data suggests that most students made good levels of improvement . . . Students experience good quality to excellent teaching across the school. ERO observed very good levels of on task learning in classrooms. Class programmes focus on improving reading and numeracy levels (http://www.ero.govt.nz/ero/reppub.nsf/).

The report authors also noted that the principal was employing teachers and other adults so that the school could lower its teacher-to-student ratios in literacy. They concluded their report by saying that they would revisit the school as part of the normal 3-year cycle, indicating ERO was satisfied that the school was now well on track to meet its targets.

Our STAR norm-referenced reading data provided quantitative confirmation of ERO's confidence. During the final 2 years of the longitudinal study, 2008 and 2009, the data showed positive shifts overall in students' reading achievement, particularly among the 2008 Year 7 students, and even more so for that cohort during their second year in the intermediate school as Year 8 students in 2009.

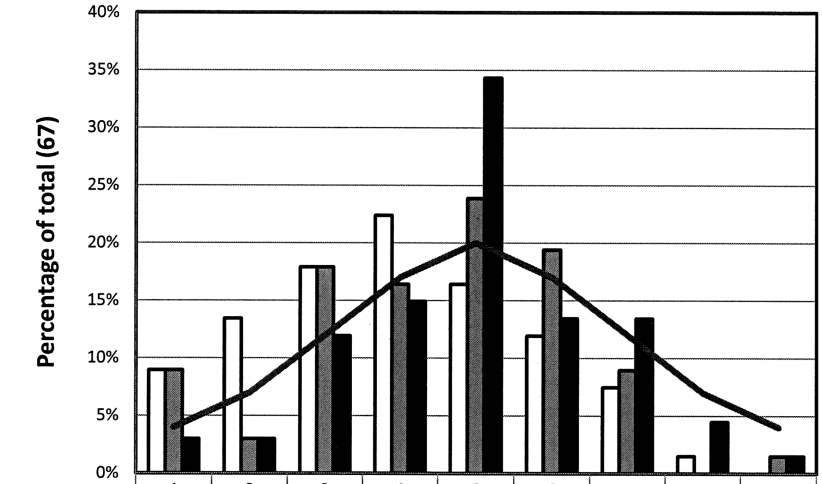
Figure 1 shows the improvement, overall, of the Year 7 students who started at East Park in 2008. Of the 70 students who started in 2008, 67 were still attending the school at the end of 2009. In February 2008, only 16% scored Stanine 5, but by the end of this group's 2 years at East Park, 34% had scored Stanine 5. Figure 1 also indicates the expected national distribution rate. By the end of 2009, the students in this very low socioeconomic, multicultural school were, on average, achieving above the national average.

The mean and standard deviations of the STAR data for February 2008, October 2008 and October 2009 were, respectively, $M = 3.97$, $SD = 1.77$; $M = 4.46$, $SD = 1.77$; and $M = 5.0$, $SD = 1.66$. t tests revealed that all combinations of difference scores were significant:

- February 2008–October 2008: $t[66] = 3.95$, $p < .001$
- October 2008–October 2009: $t[66] = 5.74$, $p < .001$
- February 2008–October 2009: $t[66] = 8.70$, $p < .001$.

Effect sizes (Cohen, 1988) between February 2008 and October 2008 were small ($d = .28$). Between October 2008 and October 2009, they were medium ($d = .32$), and between February 2008 and October 2009, they were large ($d = .6$).

The movement in achievement for the 2008 Year 8 students who were in their final year at East Park was not as substantial as that for the 2008 Year 7 students. The means and standard deviations of the STAR data for March 2008 and November 2008 were, respectively, $M = 4.03$, $SD = 1.58$; $M = 4.25$, $SD = 1.71$. t tests revealed a significant difference between scores for March 2008 and November 2008, $t[98] = 2.53$, $p = .013$,



	1	2	3	4	5	6	7	8	9
Feb-08%	9%	13%	18%	22%	16%	12%	7%	1%	0%
Oct-08%	9%	3%	18%	16%	24%	19%	9%	0%	1%
Oct-09%	3%	3%	12%	15%	34%	13%	13%	4%	1%
National %	4%	7%	12%	17%	20%	17%	12%	7%	4%

Figure 1. Change in Supplementary Tests of Achievement in Reading (STAR) Stanine all students who were at East Park Intermediate at the start of Year 7 (2008) and still there at the end of Year 8 (2009).

with an increase in scores from March 2008 to November 2008. The effect size ($d = .134$) between March 2008 and November 2008 was small.

When trying to understand what, specifically, had led to the positive changes in the students' overall reading outcomes at East Park evident by the end of Stage 3 of our study, we identified these following interacting factors as possible influences.

Factors appearing to influence improvement

The following listed factors emerged from the detailed analysis of the data described earlier of this longitudinal study.

Appointment of new principal. The school had been influenced by the ERO reviews and their authority to assess school performance and put in place strategies to improve outcomes. This impact of the feedback between the school and the wider education system had resulted in changes in school leadership and a change in the direction of the school. The ERO reviews over the time of this longitudinal study had indicated a considerable improvement in the teaching of reading and on task behaviour of the students. Additionally, the STAR data on the students' reading supported this improvement in overall reading achievement. This scenario at East Park Intermediate School aligned with Ogawa (1995), who contended that a change of leadership which produces a better 'fit' between that leadership, the teaching staff and the school's

community produces a climate of positivity for everyone associated with the school, with commensurate learning benefits for the students.

Appointment of a part-time literacy leader. As an agency external to the school, the authors of the ERO reviews during 2003–2006 of East Park School had identified the need for support in helping teachers improve their practice. Mindful of the need for literacy leadership within the school, and knowing that East Park did not have an existing teacher suitable to take on the role of literacy leader, Robert, the new principal, decided to appoint a part-time literacy leader to the school staff. This decision concurred with Timperley et al. (2007) who remind us, expertise should not be assumed of teachers who volunteer to be literacy leaders in their school; in many cases, variable expertise can hinder rather than help a school's professional learning.

Coming into the school as an outsider posed issues for the new appointee. Sharon was cognisant of the need to develop a positive rapport with the teachers yet at the same time be accountable in her role of literacy leader.

> One thing I do have to be very careful of is that because I am not full-time and I have come from a situation where I have been full-time, I don't have that mana [respect], and I have got to be very, very careful that I don't put pressure on staff. But at the same time, we are accountable for this professional development, and it has got to be done. So I have just got to walk along a line where I am not putting too much pressure on ... but at the same time, we have goals to meet (Sharon, literacy leader).

An important part of Sharon's role was assisting the teachers with the results obtained from the standardised testing in reading. These were collated centrally on the school's computer management system so that the data could be analysed to inform staff of future directions and help them set teaching and learning goals.

> Crucial to it is Sharon, organising it all, and the charts. It is interesting that the staff on the surface appear to be able to do the data; but when you dig into it a little bit, there are a few staff members that are struggling with the collection of the data (Robert, principal).

Because, as Gavelek and Bresnahan (2009) and Timperley et al. (2007) point out, assessment information helps teachers understand student-learning needs, systems that ensure accuracy in the use of the assessment tools and interpretation of the data seem crucial.

Well-directed and resourced ongoing literacy professional development. At the beginning of 2008, East Park Intermediate School became part of a cluster-wide literacy professional development programme. At this time, the overall achievement of the school's students in reading and writing was still at a very low level, and the teaching staff, most of whom were in their early years of teaching, needed support.

Together, the cluster schools, which were all in the same low socioeconomic area of the city, used recently acquired Enhancing High Standards funding from the Ministry of Education to employ an external literacy consultant to lead whole-school professional development directed at raising students' reading and writing skills. The consultant worked collectively across all schools and individually in each school. At East Park, this

person's observations of the teachers in their classrooms, followed by his modelling of explicit methods of teaching with the students, promoted credibility.

> It was quite good to have an outside person . . . actually come in and see what the teachers were doing. Then to give some feedback and do some modeling . . . He took six or seven Year 7 students and he had the Year 7 teachers sitting and watching . . . He then repeated it with the Year 8 [students and teachers] (Robert, school principal).

Timperley et al. (2007) suggest, on the basis of their best evidence synthesis of teacher professional learning and development, that observing an expert modelling specific teaching approaches during professional development helps teachers link theory to practice. The literacy consultant's work was supplemented by the school's part-time literacy leader, who monitored and supported teachers as the long-term professional development programme progressed.

It was clear from the commentary of everyone we interviewed and from our observations during Stage 3 that the whole-school professional development led by the external literacy consultant was helping the teachers, the literacy leader and the principal together develop new pedagogical content knowledge and a range of effective strategies. Reference to the best evidence synthesis by Timperley et al. (2007) is again relevant here. They found that when principals participate in professional development with their staff, as Robert did, outcomes for students tend to improve. East Park's literacy development programme saw him and the teaching staff collaboratively interpreting assessment data to inform future planning and setting of school-wide goals.

It appeared that, in this case study school, the professional development was succeeding because of the credibility and 'hands-on' facilitation of the external consultant, the ongoing support of the school's literacy leader, and the innovative strategies the principal facilitated to support both the teachers and ultimately the students (Drago-Severson & Pinto, 2006). This finding concurred with the literature which contends that professional development provides opportunities to foster, establish and sustain a learning community (Gavelek & Bresnahan, 2009). Commentators (see, e.g., Drago-Severson & Pinto, 2006; Fisher & Frey, 2007; Timperley et al., 2007) argue that any effort directed at staff improvements needs to have all staff committed to collaboratively developing a school-wide plan based on sound guiding principles.

School-wide standardised assessment of reading used to guide school planning and goal setting. During all stages of analysis of our data, using assessment data effectively to identify needs, plan, teach and inform students and parents was evident. For example, the use of assessment data, in the context of the wider cluster of schools, allowed teachers at East Park Intermediate to identify student needs and target specific groups and individuals.

> There had to be work done about the data to put in front of the staff, about the reading level of the students. As you have seen in our stats coming in, there are significant numbers of them at that critical level of Stanines 1, 2 and 3. It is quite alarming, and we just can't ignore it. Being part of the . . . cluster with our contributing schools . . . we have been sharing all the way across, and when we look at the data, it just leaps out at you. Those figures were horrendous (Robert, principal).

Anita, a Years 7–8 teacher, who had been appointed to East Park before Robert came to the school, told us that she had previously worked at another intermediate school that had assessment strategies in place similar to the ones Robert instigated. She was therefore confident in how these could be used to guide explicit teaching and thus support learning:

> I actually tested mine [the students in her class] at the beginning of the year because this was my first year here last year, so I did my own testing at the beginning of the year and then at the end of the year . . . I found that they moved up two stanines. Because they didn't actually know how to look into a book, they would just read it and put it down, and maybe get a couple of questions about it, but that was all they had had. They had no-one to go over it with them.

Anita's prior experience thus strengthened her teaching at East Park and enabled her to model effective practice to her teaching colleagues. Her descriptions of the support she gave colleagues and the comments of the recipients of that support made evident to us the importance of interaction between classroom teachers during any initiative focused on raising student achievement school-wide and changing teachers' beliefs about how that information can raise achievement. This aligned with the literature which suggests that using assessment tools to measure student achievement needs rarely changes student achievement outcomes unless teachers *collectively* believe they have the potential to have a positive impact on student achievement (see, e.g., Goddard et al., 2000; Timperley et al., 2007).

Keeping parents informed. Teachers informing parents of their child's achievement was another key factor that emerged in our analysis of the data. By Stage 3 of our study, East Park was sharing assessment results with parents so that they could gain a clear understanding of how their child was progressing in reading.

> The best part of this school is that they give you layman's terms – feedback. And they tell you exactly where your child is. I have got no hesitation with saying how brilliant they are at informing the parent (Parent).

In our wider study of five case study schools (Fletcher et al., 2010), we found that parents expected to be given norm-referenced information about how their children were achieving in reading. At East Park Intermediate, providing precise information on individual children's reading achievement in relation to that of their peers nationally was a relatively new and – for the parents – welcome practice.

Explicit teaching of reading skills. The need for specific and explicit teaching by teachers was evident as the data were analysed. Building on the school-wide professional development and/or their own previous experience, the teachers at East Park strove to remedy identified reading deficits by practising principles of explicit teaching. Anita, for example, said that the school had identified as a particular literacy-related need that of improving students' comprehension strategies: 'It is the skills in reading that these guys don't know. It is their comprehension. It is deeper features. It is unpacking a story'. We observed the teaching methodology Anita was using to address this issue. Her teaching aligned with Vygotsky (1978) where there was explicit teaching and

collaboration with peers to help develop new understandings. During one of the lessons we observed, Anita began by informing each reading group she was working with that she wanted them to use inference to unpack the story and language features. Throughout the lesson, she directed the children to silently read passages, after which she asked such questions as:

- What do you think the story might now be about?
- Is there a sentence that tells you that?
- What tells us what is happening in the story?

She actively encouraged the children to consider and discuss these questions as a group.

According to Paris (2009), repeated interactions between reader and text, between teacher and reader, and between the readers themselves in which the intended meaning of a text is debated and interpreted enhance comprehension (Paris, 2009). Anita's approach also aligned with advice offered by Pearson (2009a). He advises teachers to give their students a chance to construct and revise their current mental model of some facet of learning by beginning with general probes and then following these up with specific probes that invite the students to clarify and solidify their new learning and understandings.

Although teaching strategies had purportedly become more aligned with best practice theory at the case study school, there still appeared to be pockets of inappropriate teaching, as this parent explained.

> I don't understand the logic behind making them stand up and read at someone. That is to me irrelevant . . . But, quite frankly, all of the children that I have spoken to – Kim [her daughter] and all of her girlfriends – standing in a room and reading a book for half an hour or quarter of an hour is just mindless and is boring to them . . . I think they need to focus more on what they are reading – how to spit it back and know that they understand it is what I am trying to say.

We suspected from our classroom observations and interviews with staff that this practice, assuming the parent was correct in reporting it, may have been implemented by a relief teacher or teacher aide who was not involved in the professional development. If this was the case, the incident underlines the need to include all staff, including itinerant teachers, in the school-wide professional development.

As part of its explicit teaching strategy, the school had, during 2008, developed and implemented an action plan designed to counter the widely reported dip in students' reading progress in the final years of primary schooling. The school was doing this by targeting the most 'at risk' students, namely students achieving at Stanines 1–3.

> Our less able readers, and we do have the bulk . . . we are skewed on that side, the lower stanines, I think that we cater for them quite well with resources . . . We have a room . . . that is where our Stanine 1 and 2 children are . . . the intervention takes place there. They have a huge amount of resources (Sharon, literacy leader).

Students performing at Stanine 3 were also being withdrawn from their class and taught as a small group.

The plan provided scope for teachers to match interventions to individual students' particular needs, backgrounds and world views, practice congruent with aforementioned

sociocultural models of effective learning. The needs of Pasifika and Maori students and transient students from other schools within the underperforming group came in for special consideration in this regard. The action plan was also very specific in terms of what the school would do to meet its targets, when each would be done by, who would be responsible, and what resources were needed. This degree of specificity appeared to be aiding effective implementation and delivery of interventions.

External funding to support the school-based innovations. The initiatives focused on raising literacy achievement that the principal instigated at East Park came at a financial cost to the school. The principal said that, without the Enhanced Project Funding of NZ$45,000 per year, he would not have been able to employ the literacy leader or to employ relieving teachers to release the teachers for professional development. This highlights the crucial role of supplementary funding to school improvements.

Targeting behaviour problems while mindful of children's home backgrounds. The principal and school staff told us that many of the students at East Park Intermediate School came from challenging home backgrounds and had exhibited or were continuing to exhibit behaviour problems, even with support measures, such as teacher aides, in place.

> There are lots of interventions . . . The bulk of our staff are very young – just getting through till three o'clock, keeping a lid on things until three o'clock, because some of our children are very difficult and come from homes that we just can't even imagine. But they are in our society. They are here (Sharon, literacy leader).

Anita – the Years 7–8 teacher – told us that she used her awareness of the home backgrounds of a number of the students to provide them with as much opportunity as she could for quality reading time. However, despite such efforts on the part of the teachers, despite the school's improvement measures overall, and despite its success thus far in relation to those measures, it was evident to us that intersecting factors, such as home background and the preponderance of relatively inexperienced teachers at the school, would probably continue to challenge the school's ability to reach its improvement targets.

It is important to note that deficit in home backgrounds was not the case for all children at the case study school. Our interviews with teachers and parents provided a number of instances of teachers and parents working together to enhance the children's achievement and of home backgrounds supportive of the school's endeavours. One mother of an able reader said that she was happy with and supported the school's approach.

> She [the daughter] comes home from school, and she gets down on the lounge floor with her homework, and she squats down there, and she ploughs her way through it . . . I feel like whatever is happening is enough.

The connections and associations children have with their family and neighbourhood can exert a positive or negative pressure on their cognitive and emotional development, with deprived or nonexistent relationships resulting in little advantage (Beveridge, 2005; Bronfenbrenner, 1979). Our case study findings aligned with the findings of numerous other studies demonstrating that the home literacy environment influences children's

literacy and learning (see, e.g., Baker, 2003; Biddulph, Biddulph & Biddulph, 2003; Wylie & Hodgen, 2007) and that multiple contexts influence children's learning and acquisition of reading skills (Weigel, Martin & Bennett, 2005).

Conclusions

This case study supports the utility of taking a whole-school approach when implementing strategies designed to improve students' reading achievement. During our study, we investigated the complex and interweaving conditions apparently influencing one school in order to better understand how the wider education system to which it is connected can be manipulated to improve conditions for students' learning.

The data that we collected over the three stages of our longitudinal case study demonstrated that East Park Intermediate School made positive changes to its teaching and learning environment once measures were put in place to address the concerns about the school's learning environment that ERO officers expressed in their series of review reports on the school. These measures led to changes in the school's leadership. The state was able, through the authority of ERO personnel, to improve the school in terms of leadership and governance. Robert, East Park's new principal, came with strong knowledge of the culture of the wider community, experience in supporting minority cultural students and experience in supporting school-wide professional development. Under his direction, the school developed and implemented a collaboratively determined action plan, including school-wide professional development for staff, to support and raise the overall literacy achievement of the school's students. The principal's awareness of the potential flow across educational systems allowed him to better position both the teachers and their students in developing a school-wide environment where literacy achievement could be enhanced. He used external agencies to support the school and aligned the schools with the wider cluster of schools in his district to employ a joint literacy consultant.

A limitation of this case study is that we were not able to report the views and perspectives of the principal whose leadership had been under review by ERO. His comments may have provided not only a counterpoint against which to measure Robert's effectiveness as a principal committed to school-wide improvement, but also clearer insight into the local and broader systemic factors influencing student literacy achievement.

Another major limitation of this study, one that is common in respect of case studies of one institution, is that of generalisability of findings and conclusions to the broader setting. Although we have endeavoured to test our findings against current research literature, further study employing both qualitative and quantitative methodologies and across a broad range of schools is needed to determine the veracity and applicability of our following conclusions in respect of raising the reading achievement of under-performing students in underperforming schools. We accordingly call for further research into these key issues to uncover the 'blank spots' of how school leaders and other staff foster and sustain in-school factors that raise reading achievement and improve schooling (Foster, 2004; Heck & Hallinger, 1999). This should allow us to improve teacher education and advance practices and policies to improve outcomes for all learners.

In summary, this research provides evidence that: school leaders should endeavour to create a supportive and collaborative learning environment for students and teachers; school-wide professional development is more effective when led by a person with expertise and credibility and when the principal is an active participant in the professional

development; when assessment data are used school-wide to identify student needs, inform teaching strategies, track progress across the school and form the basis of the school-wide plan for improvement, reading outcomes are likely to be enhanced; reading programmes in the upper primary school are more effective when they are regular, sustained, and facilitated by teachers with strong pedagogical knowledge about reading; school leaders should endeavour to manage school-wide behavioural issues in a proactive and successful manner to ensure that learning can occur in optimum conditions; home–school partnerships should be fostered and parents regularly and accurately informed of their child's progress in reading and learning in general; effective teachers are those who have a sound pedagogical knowledge of reading development and are informed about effective instructional teaching approaches; and an external review process of school performance can play a critical role as a forcing mechanism for change.

We furthermore contend that our research evidence and related extant literature suggests that principals can manipulate the wider educational system to better position the learning environment for students. The external funding arising from the Ministry of Education allowed the principal to provide literacy expertise and teacher release time, with the ultimate aim of improving literacy learning. Additionally, the literacy experts were able to demonstrate how assessment tools could be used to inform teachers and principals of how to improve learning in their school rather than be viewed as performance and accountability measures by the state. We consider, on the basis of our study and relevant research literature, that more research and policy development needs to occur so that schools can receive from the wider education system the information and resources they need to better develop school-wide action plans directed at improving home–school relationships, especially in respect of educating and supporting parents in the critical role they play in improving children's reading outcomes.

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Notes

1. ERO reports can be accessed by the public online at http://www.ero.govt.nz/ero/reppub.nsf/. In New Zealand, ERO reviews each school on average once every 3 years. Supplementary reviews occur more frequently when the performance of a school is poor and there are risks to students' education and safety, 'or less frequent where a school has a stable reporting history and demonstrates good self review processes and use of

its assessment information' (New Zealand Ministry of Education, 2010). ERO reports to the school's boards of trustees on what they are doing well and where improvement is required.
2. Deciles are a measure that the Ministry of Education uses to ascertain the socioeconomic (SES) group within the school. Decile 1 denotes the lowest SES group and Decile 10 the highest.
3. Pasifika is a term used to describe people living in New Zealand who have migrated from the Pacific Islands or who identify with the Pacific Islands because of ancestry or heritage.
4. The commissioner replaced the school's board of trustees. All New Zealand schools are run by these community-elected boards.

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