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Enhanced teaching and learning of comprehension in Years 4-9 at seven Mangere schools

The schools of South Auckland which have high proportions of Māori and Pasifika students have long been described by researchers as sites for low achievement, particularly in literacy (e.g., Ramsay, Sneddon, Grenfell & Ford, 1981). However, recent evidence suggests that the disparities in reading accuracy between Māori and Pasifika students and other students have been reduced, and that there has been a substantial reduction in the proportions of students in the lowest bands of achievement. Despite this, the evidence also suggests that at Year 4 and Year 9, the disparities in reading comprehension have continued, if not increased (Crooks & Flockton, 2005).

Research questions

A research and development programme, conducted as a collaborative partnership between researchers, schools, and the Ministry of Education, was designed to test several questions about achievement in seven decile 1 schools in South Auckland. These questions were:

- Can a research-practice collaboration develop cluster-wide and school-based professional learning communities that are able to critically analyse and problem solve issues of instructional effectiveness, thereby developing more effective instruction that has a powerful educationally significant impact on Māori and Pasifika children's comprehension at Years 4-9 in decile 1 schools?
- Can a set of effective instructional activities be identified that are able to be used by teachers to enhance the teaching of comprehension for Māori and Pasifika children in Years 4-9 in decile 1 schools?

In addition, there was a specific question about Samoan students and achievement in Samoan bilingual classrooms:

- Can the research and development programme contribute to more effective instruction for Samoan students in Samoan bilingual classes?





Research Design

The research questions were based on a set of hypotheses about the nature of effective instruction for reading comprehension, and the nature of effective school-based interventions. There were two main hypotheses: first, that more effective teaching could be developed through a professional learning community that has a continuing process of critical discussion and problem solving, based on evidence (Robinson & Lai, 2006); and secondly, that effective instruction would include a range of attributes, such as explicit teaching of strategies, and deliberate teaching of vocabulary (Pressley, 2002), but that these would need to be contextualised to the specific needs created by past histories of schooling and contemporary profiles.

The research and development programme was conducted over three years with up to 70 teachers and, in different years, between 1200 and 1900 students, over 90 percent of whom were Māori or Pasifika. In the six Samoan bilingual classes from two schools, there were between 140 and 169 students across different years. A quasi-experimental design was employed to examine relationships between the programme and the outcomes over three years. The robustness of the design was enhanced by features such as a comparison with an untreated cluster of similar schools, and checks on subject attrition. Repeated measures of student achievement at the beginning and the end of each year, and a final measure at the beginning of the fourth year, form the basis of the design which, among other things, examines rates of gain against predicted patterns of growth generated from a baseline.

Findings

Baseline profiles and classroom observations

An initial step involved collecting baseline “profiles” of achievement, using the standardised assessments of reading comprehension from PAT (Reid & Elley, 1991), and of a range of aspects of reading comprehension, including decoding provided by STAR (Elley, 2001). It also involved collecting baseline profiles of classroom instruction, and using systematic observations in classrooms. Together these baselines provided detailed evidence about strengths and weaknesses in the students’ reading comprehension, which were able to be mapped on to patterns of instruction in the classroom. For example, it showed that low decoding levels were generally not a problem; rather, it was patterns of checking and detecting threats to meaning in paragraph comprehension, and size and knowledge of vocabulary, that were posing difficulties. An unpredicted finding was that while high rates of explicit strategy instruction occurred, students were focused on the strategies as ends in themselves, and often resorted to guessing. Classroom observations showed a low incidence of teachers or students monitoring and checking strategies, and low

rates of identifying and elaborating meanings of low-frequency words, unusual uses of common words, or idiomatic uses.

Feedback, analysis, and problem solving

The first phase included systematic feedback and analysis and problem solving at cluster, school, and classroom levels, using the profiles as evidence. This process occurred each year thereafter. A second phase added targeted professional development, based on the evidence in the first phase, with all the Year 4–9 teachers. The third phase involved planned sustainability of the professional learning communities, with teacher-designed projects and a cluster-led conference.

At baseline, students were on average at stanine 3.1, approximately two years below expected levels, and this was generally the case, with some variation across year levels and across schools. To test the impact of the programme, a number of different analyses were made using longitudinal cohorts, comparisons with baseline projections, and total school population changes.

Analysis of achievement for longitudinal cohorts showed that by the end of the project, the average student now scored in the average band of achievement (stanine 4.21). The overall effect size for gains in stanines was 0.62. Māori students’ achievement accelerated at similar rates to those of the other ethnic groups participating in the project, so that by the end of the project, the average Māori student scored within the average band (mean =4.73), with one cohort of Māori students (Year 4) scoring above the national expected average at stanine 5.29. Males and females made similar rates of progress over the three years in the intervention, but female students, on average, started with higher levels of achievement than male students. On average, students in each school made accelerated gains in achievement from the beginning to the end of the project.

Analyses using the design format showed that after two years and after three years, students had statistically significantly higher achievement than baseline comparison groups (effect sizes ranged between 0.31 and 0.59), and were achieving statistically significantly higher than a comparison cluster of schools (effect sizes ranged between 0.33 and 0.61.)

When total school populations were analysed (which included new students entering and students leaving), a similar picture to that of the previous analyses emerged. The overall level of achievement showed a variable but increasing trend over time, so that by the end of the intervention, the average stanine for 1700 students at 7 schools was 3.61. A range of gains was made between schools and within schools across the three phases. Several factors were suggested as contributing to these differences in gains, including degree of participation by schools and teachers, and aspects of curriculum planning.



Classroom instruction

Observations of classroom instruction were carried out systematically in both the first and the second years. Significant changes in types of teacher and student exchanges relating to the focus of the intervention were linked to the pattern of the gains over two years in the component tests. Further case studies of teachers showed that a high gain teacher more often directed students' awareness to the requirements of activities, clarified her high expectations, pushed her students with complex tasks, introduced more complex and less familiar language including idiomatic uses, created a classroom community that enjoyed the use and study of oral and written language, exposed students regularly to rich and varied texts, and was able to incorporate student cultural and linguistic resources, as well as clarifying areas of confusion.

Gains for Samoan students

The analyses of students in Samoan bilingual classrooms showed that the programme was effective in those classes too. Gains by students in the bilingual classrooms were at least as high as the gains by Samoan students in the mainstream classrooms, and in three of the year levels, they were noticeably higher. Students in bilingual classrooms were significantly lower in English reading achievement in Year 4 and Year 5, but from Year 6 onwards, their achievement levels in English were similar. Overall, cohorts made 0.8 stanine gain in two years; for four cohorts, this was a higher rate of gain than for Samoan students in mainstream classes. Gains in these classrooms could also be linked with the degree of participation by schools and teachers.

Conclusions

We concluded that it is possible to develop more effective teaching that impacts directly on the reading comprehension achievement of Year 4-9 children. The level of gains overall were in the order of one year's gain in addition to nationally expected progress over three years. When these gains are considered in terms of the history of schooling in South Auckland, the educational significance of the gains, and the international literature of schooling improvement, they are seen to be substantial. Even when results for all the students present from the beginning to the end are considered, including those who subsequently left and those who subsequently entered the school, either from earlier levels or as new students from other schools, the levels of achievement at the schools have increased considerably. Given the quasi-experimental design with its additional strengths, these gains can be attributed with some confidence to the effects of the three-phase model adopted by the research and development programme.

Collaborative research-practice-policy partnerships

The analyses suggest that thinking about and critically discussing the evidence at a classroom, school, and cluster level led to a significant part of the overall gains in achievement and that the professional learning communities had the capacity to use the evidence to make changes to existing practices. This is likely to be dependent on external support, in the form of collaborative research-practice-policy partnerships (e.g., Robinson & Lai, 2006). We need to consider how to foster such partnerships, in terms of both the kinds of partnerships being developed, and the infrastructure to support the development and sustainability of such partnerships. The Teaching & Learning Research Initiative (TLRI) provides one possible context for such partnerships to flourish.

Changes in aspects of instruction

The analyses of instruction show that specific aspects of instruction changed, including the focus on checking and detecting threats to gaining meaning in texts and boosting vocabulary acquisition, consistent with the focus of the programme and consistent with the gains that were made. But they indicated the need for caution in making assumptions about instructional and learning needs from the existing literature alone. They also indicated that effective instruction needs to be designed to fit the context-specific needs created by past histories of schooling and contemporary profiles. Interestingly, gains on the decoding test also increased to about the same degree as gains in other areas, despite not being a direct target of the intervention.

Samoan students and bilingual classes

The educational intervention also impacted on Samoan students' achievement in bilingual classrooms, demonstrating that Samoan students in bilingual classes can develop literacy in English to levels similar to those of other Samoan students who are not in bilingual classes. The evidence also shows that developmental changes in English comprehension come to reach mainstream levels by around Year 6, but that this rate of change may be modifiable too. It is important to see these results in a wider developmental and educational context, involving bilingual and biliteracy development in these classes.



References

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The full reports of all TLRI projects are published on the TLRI website (www.tlri.org.nz).

Lead authors and researchers



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Shelley MacDonald has been a Research Fellow and project manager with the Woolf Fisher Research Centre at the University

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