A whole-school approach in literacy and numeracy

Summary

How did seven programs come together to promote a whole-school approach to teaching and learning? In this strategy, participating schools selected from a suite of programs, each designed to deliver a whole-school approach to the teaching and learning of literacy or numeracy. The combination of the selected program and the accompanying professional learning aimed to deliver content and processes that built leadership capacity and supported teachers in delivering literacy and numeracy programs and approaches in ways that provided for individual student learning.

This whole-school approach was built on research findings that informed the inclusion of the critical role of quality teaching and leadership in improving student learning outcomes. To ensure sustainability – and to optimise student improvement – the design included developing the role of the principal and leadership team in leading teaching and learning, the goal of building capacity in all staff, and the effective use of data to improve whole-school planning and student outcomes.

The project was implemented in a large number and variety of NSW schools in the government, Catholic and independent sectors.

Target student group

The project involved students from years 3–6. It was implemented in 147 schools from the government, Catholic and independent sectors for two years (2009–2011) as part of the National Literacy and Numeracy Partnership.

The students involved were from metropolitan, regional, rural, remote and very remote areas. Sixteen per cent were Aboriginal primary school students, 12 per cent were refugee primary students from NSW government schools and 11 per cent were students in remote NSW schools.

Method

The participating schools were supported to select and implement one of the following programs. Each program has a whole-school focus and some common objectives, but each required some variation in the method of implementation.

Table 1: Programs offered to participating schools

Literacy/Numeracy	Program
Literacy	Reading to Learn (R2L)
Literacy	Mindful Learning, Mindful Teaching (MLMT)
Literacy	Accelerated Literacy (AL)
Literacy	Focus on Reading 3–6 (FoR)
Literacy and/or Numeracy	Individual Learning Plans (ILP)
Numeracy	Taking Off with Numeracy (TOWN)
Numeracy	QuickSmart Numeracy

The main objectives of this project in each school were as follows:

1. Improve student outcomes in literacy and numeracy, with a particular focus on students falling behind or at risk of falling behind.
2. Lift the aspirations and achievements of Aboriginal students, and reduce the gap in literacy and numeracy achievement between Aboriginal and non-Aboriginal students.
3. Lift the learning outcomes of students by pursuing a whole-school approach, including strong leadership and teacher collaboration.
4. Support principals, school leadership teams and teachers in the use of data to plan student development, and to track the performance of individual students and student cohorts over time.
5. Drive cultural change in schools by building a culture of collaboration and shared responsibility for student outcomes among teachers, recognising that they are the most significant in-school factor in changing student outcomes (Hattie 2003).
6. Provide instructional leadership and build the instructional leadership capacity of principals and school leadership teams in the delivery of literacy and numeracy teaching.
7. Provide for the professional development of teachers, with a particular focus on the effective use of data and explicit teaching methods.
8. Build shared responsibility for student achievement between principals, teachers and community stakeholders.

All programs involved some form of support and training of teachers. Before beginning, schools were supported by project facilitators to select the program most suitable to their context and identified needs after engaging in a whole-school evaluation. Schools were then assisted to develop whole-school plans, goals and targets before selecting a program.

A team of project facilitators supported schools, principals and teachers. Each facilitator became responsible for a group of schools with whom they worked collaboratively to ensure consistency of approach across the three sectors. Students identified as being at risk of achieving at or below the National Minimum Standards in Literacy or Numeracy were also supported by Individual Learning Plans.

Outline of the offered programs

Reading to Learn (R2L)
The Reading to Learn program is designed to enable students from all backgrounds to read texts in all areas of their school curriculum, with full comprehension. Reading to Learn promotes a cross-curricula and cross-year approach to learning to read and write, through engaging with fiction and non-fiction texts. (*Report of the Program Evaluation of Reading to Learn*, March 2012, p. 5)

Mindful Learning, Mindful Teaching (MLMT)
Mindful Learning, Mindful Teaching (MLMT) is designed to build teacher capacity to improve students' reading comprehension skills. It can better be described as a new approach to reading comprehension rather than a 'program' in the formal sense. MLMT is centred on an inquiry cycle that allows for a personalised approach for each learning community. (*Evaluation of Mindful Learning, Mindful Teaching*, January 2012, p. iii)

Accelerated Literacy
Accelerated Literacy, developed by Brian Gray and Wendy Cowey (Gray 2007), is a research-based, K–12 literacy teaching methodology designed to be implemented with whole-class groups. It claims to improve the literacy outcomes of Aboriginal students at an accelerated rate, while improving outcomes for all students in the class. (*Report of the Program Evaluation Accelerated Literacy*, March 2012, p.1)

Focus on Reading 3–6 (FoR)
Focus on Reading 3–6 aims to provide professional learning support to classroom teachers by targeting year 3–6 teachers in a school or community of schools, with the goal of increasing teacher knowledge about how to develop fluent readers and develop comprehension and vocabulary skills based on effective evidence-based practice. Students' reading progress is monitored against the K–6 Literacy Continuum/English K–6 syllabus. (*Evaluation of Focus on Reading*, January 2012, p. iii)

Individual Learning Plans (ILP)

The development of an Individual Learning Plan (ILP) provides targeted intervention focusing on a student's individual strengths and areas for development, in order to raise the literacy achievement of at-risk students. ILPs were used with identified children in conjunction with other programs.

Teachers plan, monitor, manage and evaluate student achievement to identify specific learning needs and appropriate teaching and learning intervention strategies. Ongoing monitoring of student progress provides data to track learning and inform decision-making regarding content, learning strategies employed, allocation of time for instruction and practice, and the environment in which the intervention is conducted. (*Report of the Program Evaluation of Individual Learning plans*, March 2012, p. 7)

Taking Off With Numeracy (TOWN)

TOWN was developed by NSW Department of Education and Communities. It is designed to assist teachers to identify where students' numeracy solution methods are breaking down, and provide clear guidance to move the students beyond those barriers. It focuses on the key concept of place value, and differentiation of students along a continuum. The primary focus was on providing professional development and support for two types of intervention: whole class and an individualised case management component. (*Final Report of Taking Off With Numeracy*, January 2012, p. 7)

QuickSmart Numeracy

The QuickSmart suite of programs was developed by the University of New England to address both literacy and numeracy needs of middle-years students (years 5–8). Only the numeracy component was offered as part of the project.

QuickSmart is a basic skills intervention designed for students who demonstrate persistently low achievement. The program aims to improve students' ability to easily and quickly recall number facts and perform basic computation skills, referred to as 'automaticity'.
(*Report of the Program Evaluation of QuickSmart Numeracy*, March 2012, p. 5)

Trained teacher educators and literacy and numeracy leaders were identified to provide professional learning and teaching support in the classroom, including observation, feedback and in-class modelling. The project facilitators were supported throughout the project with online and face-to-face development opportunities.

Through this professional learning and mentoring, teachers and leaders were supported to analyse student data to drive continuous improvement by identifying individual student learning needs, to implement proven literacy and numeracy strategies, and to use student performance information from a range of sources to track individual student and cohort progress over time. With support of the facilitator, principals and leadership teams undertook learning programs in leading whole-school cultural change and leading for continuous school improvement in literacy and numeracy.

In addition, teachers were encouraged to undertake professional learning in explicit teaching of literacy and numeracy, which involved articulating expectations for students, a clear rationale for learning a new skill or content, increased use of scaffolded learning or teacher demonstrations, and supportive student feedback.

To support the goal of lifting Literacy and Numeracy outcomes for Aboriginal students, teachers participated in cultural immersion programs to develop their capacity to tailor teaching strategies and make relevant and appropriate links between learning and local cultural backgrounds and contexts.

Results

The design and the project evaluations involved literacy and numeracy experts from the three sectors through their membership of the NSW National Partnerships Evaluation Committee – which also included representatives from academia and the Australian Centre for Education Research – and the National Literacy and Numeracy Partnership (NLNP) Project Reference Group. A range of evaluations assessed the efficiency and extent to which the listed literacy and numeracy programs achieved the goals of the project and improved student outcomes. Urbis and the Student Engagement and Program Evaluation Bureau (SEPEB) from the Department of Education and Communities each completed several of the evaluations. Each evaluation noted particular strengths and challenges related to each of the programs. Links to the reports are provided in Further reading and links section.

The evaluations showed positive outcomes from the perspective of principals, school executive staff and teachers. Specifically, the evaluations reported positive outcomes in relation to:

- transformations in whole-school culture towards continuous improvements in literacy and numeracy delivery
- greater collaboration and a shared responsibility within the school for student outcomes
- improvements in teacher capacity to deliver better literacy and numeracy outcomes.

Positive impacts on students included:

- more confidence in their learning abilities
- greater student motivation and engagement
- better student behaviour
- increased cooperation among students in class.

(Wyatt and Carbines 2012, Table 15, p. 76)

These conclusions were backed up by the results of the local measures adopted to assess the impact of these reforms, including assessments of teachers and principals; data analysis skills; and the extent to which leadership capacity of school executive staff resulted in teaching improvements.

> The school made significant improvements to numeracy teaching and learning, including changing the school timetable to increase the numeracy teaching time, reverting to class groupings, carefully considering the selection of staff to stage groups to encourage mentoring, […] delivering numeracy information sessions to parents and carers throughout the year and holding a successful maths fun day with parents and community members. Students who sat the NAPLAN Numeracy test in years 3 and 5 on average increased their scores by more than the NSW average. (Principal)

While the impact of these reforms was not able to be accurately measured through NAPLAN results due to insufficient long-range data – a minimum of five years of trend data is needed before changes can be confidently identified, as distinct from the normal variability in results from one year to the next – these reforms have established the important conditions for success over the longer term.

In the final overarching evaluation by Erebus, positive outcomes from the perspective of principals, school executive staff and teachers were reported. The evaluation provides feedback from the perspective of educational leaders and practitioners in terms of overall cultural change within the school, improvements in the capacity of staff teaching literacy and numeracy, and their assessment of improvements in student progress in everyday settings, such as improvements in student engagement and motivation in the classroom.

Key findings indicate that schools can bring about significant change by:

- taking a whole-school approach to improving student outcomes
- adopting explicit teaching strategies, where teachers identify key learning outcomes from the outset
- using data to improve whole-school planning and student outcomes
- increasing teacher collaboration and shared responsibility for student outcomes

- demonstrating effective instructional leadership, where principals play an active role in directing the delivery of teaching in their schools
- measuring the impact of quality teaching on student learning behaviours.

(Centre for Education Statistics and Evaluation 2012, *Learning Curve*, Issue 2, p. 1)

> Principals reported that they highly valued the tools provided to support school self-evaluation. Almost all teachers (95 per cent) reported that their active participation in determining the overall teaching vision and school goals had positively influenced their approach. (Centre for Education Statistics and Evaluation 2012, *Learning Curve*, issue 2, p. 2)

Next steps

As part of the evaluation, Erebus International undertook a strategic review of the outcomes of all the evaluations of literacy and numeracy programs throughout 2012. This involved reviewing the outcomes of NLNP level evaluations, and using findings to develop a user-friendly on-line resource that schools will be able to use to guide their selection of programs in the future. It is anticipated this resource will be in use in 2013.

Positive outcomes were connected to the capacity of schools to choose appropriately from a suite of literacy and numeracy programs and strategies that best met individual student learning needs and the wider school context, rather than imposing a particular program on a school that may be inappropriate or ineffective for the school or an individual student's circumstances.

> Staff now has a common language, a more unified approach and are armed with new resources to engage and motivate students. These developments brought a cultural change within the student body and the broader school community. Student engagement increased dramatically: 70 per cent of students have increased the regularity of their reading and 50 per cent of students are reading daily for leisure. Seventy per cent of students have an improved satisfaction and enjoyment of reading. (Principal)

Lessons learned

While the evaluations reported overall positive outcomes derived from the whole-school approach to literacy and numeracy, the evaluations identified some factors that impacted on the effective implementation of initiatives within individual schools.

The evaluation findings emphasised the need for stronger school leadership to drive the cultural changes necessary to foster greater teacher collaboration, and the need for leaders and teachers to evaluate the effectiveness of their practices.

According to the Phase 1 Evaluation from Erebus International (2012), staff turnover – in particular, the loss of key personnel such as the in-school leader – impacted on the success of the project. Some schools reported difficulty in obtaining casual teachers to allow staff to attend the professional development that was an important part of developing the whole-school model.

Some schools reported time pressures and competing priorities, particularly given the scale, scope and complexity of the reforms that required a time commitment.

The Erebus Evaluation (2012) found that the whole-school approach improved literacy and numeracy outcomes for Aboriginal students, students with disabilities or learning difficulties, students from culturally and linguistically diverse backgrounds and students with behavioural issues, providing certain conditions were in place in the school, such as strong leadership and a collaborative culture.

However, the evaluation was unable to conclude unequivocally that any one program from the suite of programs available was any better or worse in impacting on student outcomes. It noted that each program was affected by a range of implementation issues that may have impacted on the student outcomes. Based on this assessment, future implementation would need to focus more on overarching strategies tailored to the school context rather than emphasising individual literacy and numeracy programs.

Research base

This initiative was developed in keeping with professional best practice for principals and teachers and by a strong research base.

Professional best practice for principals

Professional best practice for principals is detailed in the National Professional Standards for Principals. The aspects most closely aligned with this initiative were:

- Standard 1: Leading teaching and learning
- Standard 2: Developing self and others
- Standard 3: Leading improvement, innovation and change.

Best practice in teaching is detailed in the Australian Professional Standards for Teachers. Particularly aligned with this initiative are the following professional standards, although all were considered relevant:

- Standard 1: Know students and how they learn
- Standard 3: Plan for and implement effective teaching and learning
- Standard 5: Engage in professional learning.

The approach used in this project was informed by research that indicates that a whole-school approach is a key component to improving literacy and numeracy outcomes. Various studies indicate that whole-school engagement is associated with schools achieving excellent results, and improvements across the entire student body (Busatto 2005; Crevola and Hill 1998; Hayes 2004).

Research supports the view that teacher quality is one of the most significant factors within the control of schools that can positively influence the learning outcomes of students. This informed the provision of significant professional development for teachers as part of the project. The instructional quality provided to students has been shown to have a significant and positive effect on student performance, accounting for as much as 30 per cent of the variance in student achievement (Hattie 2003). Quality teaching through specific high-quality instructional and assessment practices also has a role in improving equity in classrooms by being able to reduce the performance gap between Aboriginal and Torres Strait Islander students and other students, and between high and low socio-economic status communities (Amosa, Ladwig, Griffiths & Gore 2008).

The role of principals and leadership teams in the project required the development of their instructional leadership capacity based on the research that consistently indicates that, both directly and indirectly, principals have a significant effect on the learning outcomes of students, the efficacy of teachers, and the school environment (Huber and Muijs 2010; Robinson, Lloyd & Rowe 2008).

Data analysis to plan for student development, to identify students in need of additional support, and to track student and cohort progress was another key component of the project, based on research findings. It is essential that teachers are able to understand the information available to them through data and to respond appropriately to student needs (Matters 2006; Timperley 2009).

Further reading and links

Amosa W, Ladwig J, Griffiths T & Gore J 2008, 'Equity effects of quality teaching: closing the gap' in AARE 2007 International Education Research Conference, Australian Association of Research in Education, Melbourne.

Australian Institute for Teaching and School Leadership (AITSL) 2012, *Australian Professional Standards for Teacher*s, http://www.teacherstandards.aitsl.edu.au 🔗.

Australian Institute for Teaching and School Leadership (AITSL) 2011, National Professional Standard for Principals, http://www.aitsl.edu.au/verve/_resources/NationalProfessionalStandardForPrincipals_July 25.pdf 🔗.

Busatto S 2005, *What's 'Making the Difference'? Achieving Outstanding Numeracy Outcomes in NSW Primary Schools*, Australian Government.

Centre for Education Statistics and Evaluation 2012, 'Teaching quality: effective teaching practices for improving student achievement', *Learning Curve,* 2, NSW Department of Education and Communities, Sydney.

Crevola, CA & Hill, PW 1998, 'Evaluation of a Whole-School Approach to Prevention and Intervention in Early Literacy', *Journal of Education for Students Placed at Risk*, 3(2), pp.133–157.

Fullan M 2010, *All Systems Go: The Change Imperative for Whole System Reform*, Corwin Publishing & the Ontario Principals' Council.

Gray, B 2007, *Accelerating the Literacy Development of Indigenous Students*, Charles Darwin University Press, Darwin.

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

Hattie J & Timperley H 2007, 'The Power of Feedback', *Review of Educational Research*, March, vol. 77, no. 1, pp. 81–112

Hayes D 2004, 'Whole school change that spreads and lasts: A technology for resilience for schools working within adverse condition', paper presented at the International Education Research Conference, Melbourne.

Huber SJ & Muijs D 2010, 'School Leadership Effectiveness: The Growing Insight in the Importance of School Leadership for the Quality and Development of Schools and Their Pupils', *School Leadership International Perspectives*, SG Huber, RC Saravanabhavan & S Hader-Popp (eds), Springer Publishing.

Matters G 2006, 'Using Data to Support Learning in Schools: Students, teachers, systems', *Australian Educational Review*, Australian Council for Educational Research, Camberwell.

Robinson V, Lloyd C & Rowe K 2008, 'Evidence for the kinds of feedback data that support both student and teacher learning', paper presented at the Using Data to Support Learning Research Conference, Melbourne.

Student Engagement and Program Evaluation Bureau (SEPEB) 2012, *Report of the Program Evaluation of Reading to Learn*, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Reading-To-Learn-December-Report.pdf .

Student Engagement and Program Evaluation Bureau (SEPEB) 2012, *Report of the Program Evaluation of Individual Learning plans*, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Individual-Learning-Plans-December-Report.pdf .

Student Engagement and Program Evaluation Bureau (SEPEB) 2012 Report of the Program Evaluation of QuickSmart Numeracy, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/QuickSmart-Numeracy-December-Report.pdf .

Student Engagement and Program Evaluation Bureau (SEPEB) 2012, *Report of the Program Evaluation of Accelerated Literacy*, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Accelerated-Literacy-December-Report.pdf .

Timperley H 2009, 'Using assessment data for improving teaching practice', paper presented at the ACER Research Conference: Assessment and Student Learning: Collecting, Interpreting and Using Data to Inform Teaching, Perth.

Urbis 2012, *Evaluation of Focus on Reading 3–6*, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Focus-on-Reading-Evaluation-Final-Report-Dec-2012.pdf .

Urbis 2012, *Final Report of Taking Off With Numeracy (TOWN)*, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Taking-Off-With-Numeracy-Final-Report-Dec-2012.pdf .

Urbis 2012, Evaluation of Mindful Learning Mindful Teaching, prepared for the NSW Department of Education and Communities, http://www.nationalpartnerships.nsw.edu.au/resources/documents/Taking-Off-With-Numeracy-Final-Report-Dec-2012.pdf .

Wyatt T & Carbine R 2012, *Evaluation of the Take-up and Sustainability of New Literacy and Numeracy Practices in NSW Schools*: *Final Report of Phase 1*, Erebus International

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