



schoolinsight

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Department of
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Special Edition School Innovation

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School Innovation

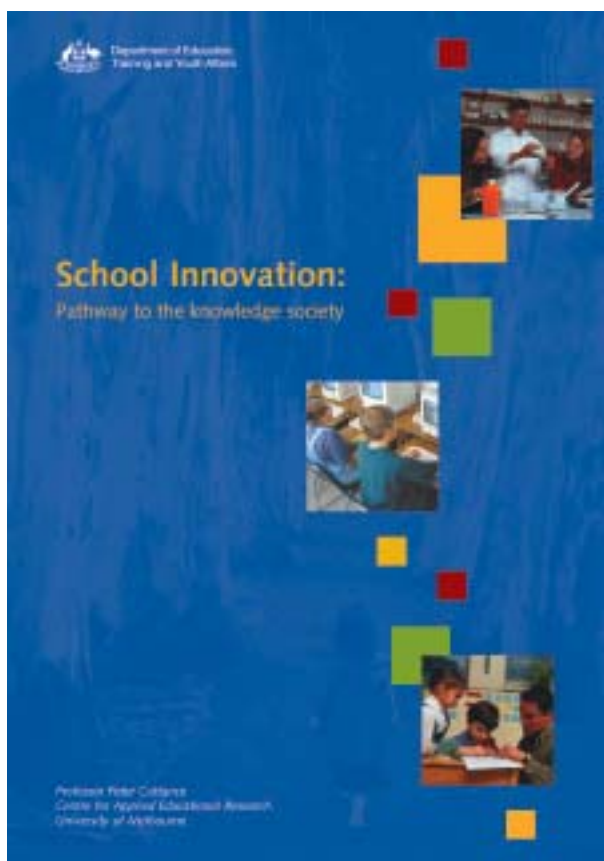
Pathway to the Knowledge Society

Introduction

The National Conference on Quality Teaching held in Melbourne on 11–12 July provided the backdrop for Dr Kemp to launch the report entitled *School Innovation: Pathway to the Knowledge Society*.

This Commonwealth funded report is the outcome of three years' work between 1998–2000 by the Innovation and Best Practice Project (IBPP) consortium led by Professor Peter Cuttance, Director of the Centre for Applied Educational Research at the University of Melbourne.

This school-based initiative is one of the first large scale research and development projects that has specifically focused on innovation in schools, and one of the largest educational research projects ever undertaken in Australia. The research was undertaken in schools across all systems and sectors in Australia and the report acknowledges the agreement of education systems and sectors for the research to take place in their schools. Each of the 107 participating schools developed and implemented a significant innovation aimed at improving learning outcomes for students.



A wide cross-section of schools participated in the project. Two-thirds were from Government school systems, one-fifth described themselves as serving communities with significant levels of social and economic disadvantage, more than one-sixth indicated that their innovation was in response to a perceived crisis or threat to their viability. Teachers and principals gained significant benefits from the professional learning they gained in the various roles they played in the innovations and in the conduct of the school-based research.

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The report provides an analysis of the innovations and the findings of the 107 research reports produced by the participating schools and shows that, given the right conditions, schools can produce innovative approaches that improve student outcomes and respond to the emerging challenges ahead. The vital ingredients for achieving this are high quality teaching, effective school leadership, effective data on what works and the flexibility for teachers and principals to respond to the data in ways that draw fully on their expertise and experience.

The majority of the innovations were able to demonstrate that they

had been successful in improving learning outcomes for students, hence the ultimate benefits from the project were the learning gains made by students who participated in the innovations. Teachers and principals gained significant benefits from the professional learning in the various roles they played in the innovations and in the conduct of the school-based research.

The report focuses on the groups of schools that undertook innovations in literacy in the early years of schooling, mathematics, information and communication technologies and the middle-years of schooling. In addition, it

analyses the role of leadership in the innovations, the flexible use of resources and the process of managing innovation in schools. The concluding chapters draw out the implications of the findings of the research for practice in schools and for the development of policy to support innovation in schools.

The full text of the report is publicly available on the Internet at www.detya.gov.au/schools/publicat.htm. For a hard copy of the report, please contact the editor of *School Insight* at the address on the back page. What follows is an outline of the report's key findings.

Early Literacy

The strongest evidence of successful literacy improvement was in improved results from assessments that schools used to compare the achievement of their students with those in other schools or with earlier cohorts of students in the same school.

The schools that provided the strongest evidence of improvements attributed to their innovations all focused on literacy in the early years of schooling. These innovations exhibited the following features:

- a coherent, whole-school programme to achieve literacy success;
- the development among staff of a set of shared beliefs and understandings and, in particular, high expectations for all students;
- the articulation of explicit standards and associated targets and the use of data to inform teaching and learning and to drive improvement;
- a team approach to professional learning that encouraged ongoing, site-based professional development, mentoring and coaching for teams of teachers;
- a willingness and capacity to make significant changes to school and class organisational arrangements;
- the provision of intervention programmes and special assistance to students who were not progressing at the same pace or reach the same standards as their peers;
- effective leadership by the principal, senior administrative staff and project coordinator; and
- proactive and systematic links with the home, the previous school, other service providers and the wider community.

There are four main conclusions from the projects undertaken by the IBPP early literacy schools. First, significant improvements in student learning outcomes are achievable through particular approaches to innovation and the implementation of best practice. Second, the use of data on student learning to inform teaching and learning and to drive improvement initiatives is important. Third, schools need to internalise powerful approaches to professional learning and staff development to bring about change. Finally, informed and committed instructional leadership on the part of the principal, senior staff, and teachers is required for successful innovation and implementation of best practice.

Message from the Minister

Welcome to this special edition of School Insight, which provides an overview of the key findings of the report *School Innovation: Pathway to the Knowledge Society*.

This report contains powerful conclusions for governments, education systems, schools and teachers. I would like to highlight some of these, which point the way forward to how we can equip schools to innovate and respond to the challenges in their environment.

Firstly, the report notes that teaching and learning was the major focus of most of the initiatives. Rather than focusing on organisational change, the schools involved in the project focussed their attention on student learning first and made organisational changes as required to address student learning.

The report states that “Probably the most important outcome of the IBPP project was its lessons for teacher learning. The most powerful innovations incorporated teams of teachers learning by ‘working’ with new knowledge and, in the process, enhancing their understanding of the learning needs and capacities of their students”.

The project provides strong evidence that professional learning can only be achieved by teachers working with the knowledge that they are incorporating into their innovations. Teacher-based research and evaluation of



their practice is a necessary component of successful school innovation.

Secondly, the report also provides powerful evidence of the crucial role of effective leadership in the successful implementation of innovation. The strategic leadership of principals was essential in almost every successful innovation with principals being the initiators and the driving force behind innovation in many cases.

Teachers played critical leadership roles as well. The research demonstrates that schools need to have access to a critical level of high quality instructional leadership by teachers if they are to be successful in developing and implementing innovations that lead to substantial improvements for students. The driving professional passion of teachers was evident in many of the successful innovations.

Thirdly, the report also argues that the broader policy agenda needs to focus on how the future of schools in Australia can be supported and informed by encouraging innovation. It points out that few of the schools involved in the project were influenced by systemic programmes and policies to embark on their innovation. This leads to the conclusion that the primary role of systems in innovation may be in the development of an infrastructure that supports schools’ access to external resources of expertise, programmes and resources that they require for innovation.

Fourthly, the report highlights a need for system authorities to ensure that schools have the means of evaluating change, particularly in the light of increasing demands on schools to account for their performance.

Finally, the findings of the report reinforce the Commonwealth Government’s strategy to drive improvements in education through a focus on outcomes benchmarked against national and international standards.

I am pleased to commend this report to you, which will make an important contribution to the ongoing debate about school improvement and school reform.

David Kemp

Mathematics

The mathematics innovations tended to be the result of the work of only one or two individuals within a subsection of the school and were rarely part of a whole-school approach to improvement involving other faculties or parts of the school.

Most of the schools found that significant progress was made in the performance of their students in mathematics over the period of the project. Students in these schools reported that they liked their mathematics classes to engage and motivate them, to allow them more time to absorb new concepts and to enable them to experience success in learning mathematics.

Schools sought to enhance mathematical performance by also improving the self-image that students had of themselves as mathematicians.

“We should be able to get students talking about maths the way they talk about sports and Rock Eisteddfods”.

The teacher practices that were most effective in developing student capacity, confidence and engagement in mathematics were:



- a willingness to explore and consider alternative teaching practices and organisational structures;
- the provision of appropriate time for learning to take place;
- a recognition that students learn at different rates;
- the use of clear explanations;
- the introduction of new knowledge in manageable amounts;
- a willingness to respond to students' preferred ways of learning; and

- targeted individual assistance.

The project indicated that mathematics teaching would benefit from a coordinated initiative along the lines of recent successful literacy innovations. Such initiatives would need to support teachers to become better informed about the teaching practices most likely to lead to improved learning outcomes of students, provide access to appropriate professional development, provide enhanced access to technology and use data to drive improvement.

The Middle-Years

Staff in schools acknowledged the low levels of engagement among many students during the middle-years and agreed that significant changes are justified to improve outcomes for students. In most of the schools there was the perception of empowerment and openness to the more flexible strategies that can be implemented following enhanced levels of school self-management in many systems. Recent initiatives and research are providing school staff with access to a more complete picture of alternative models of

educational provision in the middle-years.

The innovations ranged from alternative models of school and class organisation—including the creation of middle-schools within schools; the development of competencies to facilitate life-long learning; primary to secondary transition programmes; and curriculum redevelopment. A small number of schools focused on developing alternative programmes for groups of students who had

already disengaged from school-based learning or who had particular learning needs.

Most schools indicated that there had been improvements across a range of key outcomes, but particularly in increased student engagement in learning; changes in teacher beliefs, understandings, knowledge and expertise; changes in the way teachers taught in the classroom; and changes in student attitudes towards school.



Information and Communication Technologies (ICT)

Most of the schools implemented strategies to integrate ICT into their everyday learning environments. They focused their innovations on using computers and associated hardware (mostly scanners, printers, and video cameras) standard educational and business software and the Internet to enhance the learning environment for students.

The ICT innovations impacted on teachers in a number of ways:

- teacher beliefs and attitudes about learning and teaching styles and practices changed from traditional 'chalk and talk' to student-focused learning;
- teachers were able to demonstrate concepts more efficiently and effectively using ICT resources such as CD digital texts, the Internet and specialist software; and

- teachers experienced enhanced professional satisfaction from increased levels of student learning and more effective classroom management associated with learning through technology.

The innovations showed that ICT itself can act as a catalyst to learning, can be effectively utilised to improve learning outcomes in both the cognitive and non-cognitive domains, and can be integrated into learning environments to support significant enhancements in student engagement, enjoyment and motivation to learn.

There was widespread evidence that student engagement and motivation could be substantially enhanced by the effective integration of ICT:

"Students not previously engaged are giving up their lunchtimes to work on the Web pages".

Instructional Flexibility

A third of the IBPP school research reports made no reference to flexibility as a factor in their success, although most schools used flexible arrangements of some kind. Schools introduced four kinds of instructional flexibility through their innovations:

- off-site learning;
- flexible student grouping;
- flexible use of staff; and
- school consortia.

The evidence about instructional flexibility shows that many schools were challenged to organise schools and classrooms in ways that enabled them to respond more effectively to the wide range of differing needs among their students. Notwithstanding considerable difficulties, schools experimented with flexible groupings, staff deployment practices, locations and structures in ways that challenged the tyranny of the conventional timetable, organisational structures and staffing practices and constraints.

Leadership

Educational leadership was central to the success of the innovations in IBPP schools. School-based leadership is a function of both the principalship and key change agents both within and external to the school. Successful innovations represented the response of schools to an identified educational need and were supported by a clearly articulated school vision.

The IBPP research revealed two forms of organisation-wide learning that may well be regarded as manifesting leadership. The first form

focuses on generating alignment between significant school organisational elements. The second form focuses on the development of a school-wide approach to pedagogy.

Principal-leaders and teacher-leaders are both important in successful school reform. Principal-leaders play a key role in meta-strategic leadership while teacher-leaders have primary roles in more direct matters of teaching and learning. Successful innovation requires effective articulation of the roles of those exercising

leadership as much as the leadership capacities and capabilities of the individuals involved.

The impact of key personnel such as the school principal was evident in responses to the project survey. As one teacher pointed out:

“...the role of the principal as primary vision-maker and powerful advocate for change was highlighted...(but) the role of the principal in sharing power and devolving leadership roles to others cannot be under-estimated”.

Managing Innovation

The process of innovation in schools was focused on four issues: the impact of systemic practices and policies in school innovations on management flexibility; response to market pressures; the pattern of change over time; and the use of evaluation as a tool to help manage innovations.

Schools generally had substantial autonomy to initiate and implement reforms. Every school faced some obstacles, but the majority of schools either operated within or worked around constraints. Up to a third of schools reported a constraint they were unable to resolve. These were either bureaucratic, cultural or ideological. Bureaucratic obstacles were the

most common and difficult to resolve and were chiefly related to restrictions on the recruitment, selection and appointment of staff and lack of flexibility to deploy funding in ways that supported the improvement of learning. The staffing and funding flexibility issues were intertwined, because staff constitute the major share of school funds.

Four patterns of change were evident in IBPP schools:

- The most common pattern of change involved schools developing an innovation and then making further changes over a period of time as they fine-tuned it in response to feedback about its effectiveness.
- Some schools introduced an innovation, but had not refined it any further during the period of the project although many indicated they are likely to do so.
- A small number of schools made a change, reviewed it and then reverted back to the situation that existed prior to the innovation. Two had rejected their innovations and the other two could be described as having given up.
- A small number of schools did not make the changes they planned. The evidence suggested that their failure to take action was significantly influenced by underlying inflexibilities.

Lessons for Practice

The outcomes that schools sought to improve through their innovations were broader than the standard set of curriculum outcomes currently assessed and reported by most schools. In addition to the standard outcomes associated with the knowledge that is the focus of formal curricula, IBPP schools sought to assess complex thinking skills, and the affective and social competencies of students.

The following are the key findings about effective practice across the IBPP schools.

- Effective innovations were grounded on whole-school understandings and beliefs. This required schools to develop a shared understanding and set of beliefs about best practice for their student population and a preparedness to test strategies against alternative options.
- Distributed leadership is essential to developing awareness of emerging challenges and successful innovation. While the principal was a key supporter of the innovation and in many instances also the catalyst, teachers were the driving forces of instructional leadership.
- Innovative schools were prepared to set standards and targets for their improvement and to modify these in light of experience. Many schools found that they had to invent their own strategies for measuring their success.
- IBPP schools were prepared to take a hard look at their performance and subject their innovations to rigorous scrutiny. Participation in the IBPP required each school to evaluate the



impact of its innovation on student learning outcomes.

- Teaching and learning was the principal focus of the innovation in each school. Many of the findings about teaching and learning practices are supported by the research literature. These findings support a model of cognitive development that focuses on the acquisition of basic cognitive skills in the early-years, the development of meta-cognitive skills and knowledge in the middle-years and cognitive maturity and self-directed learning in the senior years of schooling.
- The models of teaching that schools incorporated into their innovations were based on the integration of whole-class or large-group explicit teaching; small-group cooperative learning and teaching; and one-to-one tutoring.
- Probably the most important outcome of the IBPP project was its lessons for teacher learning. The most powerful innovations incorporated teams of teachers

learning by ‘working’ with new knowledge and, in the process, enhancing their understanding of the learning needs and capacities of their students. In these ‘learning teams’, teachers played a variety of roles.

- The IBPP schools sought to enhance the learning network. This includes the parent community. In particular, schools focused on expanding the knowledge base and information about student learning to the student’s home. Innovations in the middle-years and senior-years expanded the learning network to include local businesses and community organisations.
- The IBPP demonstrated some significant gaps in the capacity of schools to undertake innovation and evaluation without external support. Two main ones concerned the sourcing of relevant knowledge to support and develop their innovations, and skills and knowledge about how to collect and analyse data to evaluate the impact of the evaluations.

Lessons for Policy

The IBPP was designed to support school innovation by exerting constructive pressure for schools to demonstrate their effectiveness in improving learning outcomes for students. Both constructive pressure and support are necessary components in the improvement of schools.

Pressure was applied internally in schools through the professional expectations and knowledge of teachers and their commitment to achieve the best for their students. External pressure came through specific developments in the educational environment of schooling such as increased devolution, increased accountability for student learning outcomes and market forces. Government policies and programmes focused on improving literacy, education in the middle-years of schooling and information

and communication technologies also exerted pressure on schools.

The innovations that the IBPP schools implemented are no more than the tip of the iceberg of innovations in schools across the nation. A policy framework is crucial to support schools to develop and implement innovations, evaluate their

impact on student learning outcomes and disseminate this knowledge so that it is accessible to other schools. Such a framework would enhance the capacity of schools to meet the demands that will be placed on them as we move towards a society and economy that makes better use of our intellectual capital.



We welcome your comments or contributions to future editions of *School Insight*.

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LATHAM

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CONDER

Stromlo High School
WARAMANGA

New South Wales

Albion Park Public School
ALBION PARK

Ashfield Boys High School
ASHFIELD

Bethlehem College
ASHFIELD

Burwood Girls' High School
CROYDON

Cabramatta Public School
CABRAMATTA

Central Coast Grammar School
ERINA HEIGHTS

Christian Community High School
REGENTS PARK

Corowa High School
COROWA

Curl Curl North Primary School
CURL CURL NORTH

Emmaus Catholic College
ESKINE PARK

Holsworthy High School
HOLSWORTHY

James Cook Boys
Technology High School
KOGARAH

Kanahooka High School
DAPTO

Keira Technology High School
FAIRY MEADOW

Kotara High School
ADAMSTOWN HEIGHTS

Kurri Kurri High School
KURRI KURRI

Merimbula Public School
MERIMBULA

MLC School
BURWOOD

Mount Pritchard East Public School
MT PRITCHARD

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SHALVEY

Nowra Public School
NOWRA

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NOWRA

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WAVERLY

St Joseph's Primary School
TWEED HEADS

St Martha's School
STRATHFIELD

Stella Maris College Ltd.
MANLY

Terrigal Primary School
TERRIGAL

The Illawarra Grammar School
FIGTREE

Trinity Senior High School
WAGGA WAGGA

Westfields Sports High School
FAIRFIELD WEST

Northern Territory

Anzac Hill High School
ALICE SPRINGS

Centralian College
ALICE SPRINGS

Queensland

A. B. Paterson College
ARUNDEL

Cairns Consortium of Schools
MANUNDA

Cannon Hill Anglican College
TINGALPA DC

Chinchilla State High School
CHINCHILLA

Forest Lake College
FOREST LAKE

Harristown State High School
TOOWOOMBA

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IPSWICH

John Paul College Primary School
DAISY HILL

Pomona State School
POMONA

St Catherines Primary School
WISHART

St Hilda's
SOUTHPORT

Stuartholme School
TOOWONG

Sunshine Beach State School
SUNSHINE BEACH

The Willows State School
THURINGOWA CENTRAL

Whitfield State School
CAIRNS

Woree State High School
CAIRNS

Yarrabah State High School
YARRABAH

South Australia

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Tasmania

Brooks High School
MOWBRAY HEIGHTS

Claremont Primary School
CLAREMONT

Clarence High School
BELLERIVE

The Hutchins School
SANDY BAY

Victoria

Apollo Parkways Primary School
GREENSBOROUGH

Benalla Primary School
BENALLA

Bendigo Senior Secondary College
BENDIGO

Buckley Park Secondary College
ESSENDON

Canadian Lead Primary School
BALLARAT

Christian Brothers College
EAST ST KILDA

Coatsville Primary School
EAST BENTLEIGH

Dallas North Primary School
DALLAS

Dandenong South Primary School
DANDENONG

Daylesford Primary School
DAYLESFORD

Deer Park Secondary College
DEER PARK

Derrinallum College
DERRINALLUM

Eumemmerring Secondary College
(Fountain Gate Campus)
FOUNTAIN GATE

Frankston High School
FRANKSTON

Glen Waverley Secondary College
GLEN WAVERLEY

Hamilton North Primary School
HAMILTON

Maryborough Regional College
MARYBOROUGH

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ALTONA WEST

Mt Eliza Secondary College
MT ELIZA

Overnewton Anglican
Secondary College
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MORDIALLOC EAST

St Augustine's Catholic
Primary School
FRANKSTON

St Michael's Grammar School
ST KILDA

St Paul's School-Woodleigh
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