

Excellence in Professional Practice Conference 2015

*Improving assessments of
student learning*

Thursday, 21 May – Saturday, 23 May

Novotel Sydney Brighton Beach
The Grand Parade, Brighton-Le-Sands
NSW 2216 Australia

www.acer.edu.au/eppc



PROPOSAL REVIEWERS

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Ms Janette Ellis, generatEd

Ms Karen Endicott, Sarah Redfern High School, Minto, NSW

Ms Michaela Epstein, Teach for Australia

Ms Helen Hatzikalis, ACER

Mrs Mathilda Joubert, Swan Christian Education Association, WA

Ms Kim McHugh, Association of Independent Schools, WA

Mr Chris Munro, St Kevin's College, VIC

Mr Tim Newcomb, Our Lady of Sion College, Box Hill, VIC

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Mrs Lorraine Willis, Xavier High School, Albury, NSW

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FOREWORD

Welcome to the third *Excellence in Professional Practice Conference* (EPPC), a forum for teachers and schools to share the outcomes of their work within a broader 'improvement community'. This year's topic – improving assessments of student learning – reflects the growing demand and momentum for change in assessment policy and practice in Australia and globally.

Many teachers and school leaders are engaged in improvement projects with a focus on assessment. EPPC 2015 showcases some of the approaches school communities are taking to transform and reform assessment. More than one hundred presenters will share their experiences of data-informed school improvement. This year's conference has attracted participants from across Australian states and territories, and several countries including Singapore, Hong Kong, Brunei, Malaysia and the United States of America. I encourage you to contribute to the success of this conference and the wider improvement community by taking the opportunity to meet new people and to share, reflect on and challenge your professional practice.

We are delighted to share the conference venue with Australia's Science of Learning Research Centre, giving participants the opportunity to meet with researchers undertaking cutting-edge work in understanding the brain and aspects of human learning.

In the coming months, ACER would like to hear from all of you. We are holding conversations around the reform and innovation of student assessments, with face-to-face and online events and conferences in our Rolling Summit on Assessment Reform and Innovation (www.acer.edu.au/cari).

I do hope you enjoy and learn from this year's *Excellence in Professional Practice Conference*. Please consider submitting a proposal for next year's conference before submissions close in December.

Professor Geoff N Masters AO
Chief Executive Officer, ACER



A handwritten signature in blue ink that reads "Geoff N Masters". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

RAPPORTEUR

Because we believe that it's important to share teachers' work in many ways, ACER has asked Professor Marie Brennan to attend Conference sessions in order to capture and synthesise the projects that schools have conducted, and to write a paper on practitioners' research.

A popular keynote speaker in 2014, Professor Brennan is currently Professor of Education in the College of Education at Victoria University, Melbourne. She started her education career as a technical teacher of humanities in the 1970s, and has worked in many positions since then, including as a member of the Access Skills Project Team in the Curriculum and Research Branch, co-coordinating the Victorian School Improvement Plan, and as a policy analyst in the ministry-wide Policy Coordination Division. Her university positions include stints at Deakin University, Central Queensland University, the University of Canberra and the University of South Australia. Now back in Melbourne, Professor Brennan is active in research that involves teachers, students and community members, including in Australian Research Council projects in Queensland and South Australia regional areas, as well as in Melbourne's west.

Professor Brennan will be moving between presentations, taking notes and asking questions, so please make her welcome.



Professor Marie Brennan

ROLLING SUMMIT ON ASSESSMENT REFORM AND INNOVATION

ACER wants to hear from you. We are holding conversations around reform and innovation of student assessments, with face-to-face and online events as well as EPPC and the Research Conference. It's called a Rolling Summit because it's growing in energy as it moves across the country. We aim to collect hundreds of examples of practice that supports student growth and success experiences. We also want to hear how you've overcome any barriers to change. We'll share these at events and on our website throughout the year.

Principals, curriculum leaders and teachers: please let us know what you're doing and how you're thinking about assessment by going to

<https://www.surveymonkey.com/s/ACERassessment>

If you would like to know more about the work of the Centre for Assessment Reform and Innovation see www.acer.edu.au/cari

GIVING TEACHERS A VOICE

As part of ACER's Rolling Summit in Assessment Reform and Innovation, the video booth at EPPC will capture insights and questions from those that really matter.

What would you most like to change about assessment? Record your thoughts in the booth.

Do you have something you'd like to ask Carol Ann Tomlinson, Carol Dweck, Dylan William, Geoff Masters, John Hattie, Patrick Griffin or other researchers? You have the opportunity to ask the questions and ACER will ask world leaders in education to answer them.

The video clips and responses will be featured at the Research Conference in August and on the ACER website and publications.

Don't miss your chance to have a say!

Conference Timetable

DAY 1

THURSDAY 21 MAY

8.00 am	Registration and Welcome Tea and Coffee (Networking, Exhibitors' Expo)				
9.00–10.30 am	Welcome to Country Conference Opening Dr Elizabeth Hartnell-Young, ACER Keynote 1: Building Assessment Literacy with Teachers and Students: New challenges Professor Marie Brennan, Victoria University				
10.30–11.00 am	Morning Tea (Networking, Exhibitors' Expo)				
	ENDEAVOUR 1	ENDEAVOUR 2	ENDEAVOUR 3	SIRIUS 2	LA PEROUSE 2
Session 1 11 am–12.30 pm	Using Feedback to Build a Growth Mindset: A whole-school initiative Dr Jane Mitchell <i>Charles Sturt University, NSW, (45 minutes)</i>	Teaching to Learn, Learning to Teach! Using data to inform teaching practice in literacy and improve student learning Mrs Jane Denny <i>Catholic Schools Office: Broken Bay, NSW (45 minutes)</i>	Technology, Evidence-based Assessment and Learning for all in Maths Mr Paul Sheedy <i>St Paul's Primary, Coburg, Vic. (45 minutes)</i>	From Acquisition to Mastery: How reading profiles impact on outcomes for struggling students Mrs Susan Woolfenden <i>Catholic Education Diocese of Parramatta, NSW (45 minutes)</i>	Using Assessment Data to Improve Reading Comprehension Instruction and Evaluate its Effectiveness Ms Julia Blakey <i>St Mark's Primary School, Dingley, Vic. (45 minutes)</i>
	Feedback: Focus on creating critical reflection in students Mrs Christine Hills <i>Gladstone State High School, Qld (30 minutes)</i>	Using Formative Assessment to help South Asian Ethnic Minority Students Learn Chinese as a Second Language Dr Zhihui Kou <i>The Chinese University of Hong Kong (30 minutes)</i>	Using Data from the Mathematics Assessment Interview (MAI) to Improve First Wave Instruction Mrs Bianca Witney <i>Catholic Schools Diocese of Broken Bay (30 minutes)</i>	Navigating the Literacy Learning Journey from Early Years to Year 3 and Beyond Ms Evelyn Terry <i>School Academic Support Services, Qld (30 minutes)</i>	The Year 10 Book Project: Improving motivation and achievement through publishing Ms Shelley Davidow <i>Noosa Pengari Steiner School, Qld (30 minutes)</i>
12.30–1.30 pm	Lunch (Networking, Exhibitors' Expo)				
Session 2 1.30–3.00 pm	Adopting a Growth Mindset: Using student data to improve learning outcomes in Mathematics Mrs Kimberley Morgan <i>St. Monica's Primary School, Footscray, Vic. (Workshop, 90 minutes)</i>	A Reading Mission Accomplished: How a focus on research, evidence and 'task predicts performance' achieved the greatest growth in reading Ms Linda Fox <i>Port Augusta / Quorn Partnership, DECD, SA (Workshop, 90 minutes)</i>	Putting Faces to the Data: Empowering students to engage with their learning Ms Sheri Evans <i>Medina Primary School, WA (Workshop, 90 minutes)</i>	Empowering Local Learners: A pre-school to secondary approach to improving executive functioning through a Mathematics lens Mr Shane Loader <i>Port Augusta / Quorn Partnership, DECD, SA (Workshop, 90 minutes)</i>	Why Does he Keep Doing That? Utilising Functional Behaviour Assessments Ms Aurora Alonzo <i>Woodbury Autism Education and Research, NSW (Workshop, 90 minutes)</i>
3.00–3.30 pm	Afternoon Tea (Networking, Exhibitors' Expo)				
Session 3 3.30–4.30 pm	Learning Without Limits: A developmental approach to learning and assessment Mrs Heather De Blasio <i>Wilderness School, SA (30 minutes)</i> Teachers Teaching Teachers: Creating a sustainable in-house professional development program Mrs Amy Dugré <i>The Willows Community School, California, USA (30 minutes)</i>	Using Teacher-designed Online Assessments to Drive Differentiated Instruction in Mathematics Mr Anthony Speranza <i>St Mark's Primary School, Dingley, Vic. (30 minutes)</i> Designing a School Improvement Plan: Using a framework for effective school improvement Mr Robert Marshall <i>ACER Institute (30 minutes)</i>	Getting REEL: Richardson engaging effective learning by using high-impact instructional strategies to improve student outcomes Ms Kristy Grady <i>Richardson Primary School, ACT (30 minutes)</i> Targeted Practice Towards the Improvement of Writing Mr Matthew Smith <i>Mount St. Joseph Girls' College, Altona, Vic (30 minutes)</i>	A Read on the Data: Rethinking the use of data to close the skills gaps of readers left behind Mr Neil Lloyd <i>Brisbane Youth Education and Training Centre, QLD (30 minutes)</i> Levers for Change: Leading professional practice for improved literacy performance Mr Ivan Baker <i>Chifley College Shalvey Campus, NSW (30 minutes)</i>	
Session 4 4.40–5.30 pm	Learning More about Feedback from Education and Neuroscience Professor John Hattie, Melbourne Educational Research Institute at The University of Melbourne, and Professor Pankaj Sah, Queensland Brain Institute, University of Queensland				
5.30–7.00 pm	Networking Drinks (Endeavour Ballroom foyer)				

Conference Timetable

DAY 2

FRIDAY 22 MAY

8.30 am	Welcome Tea and Coffee (Networking, Exhibitors' Expo)				
	ENDEAVOUR 1	ENDEAVOUR 2	ENDEAVOUR 3	SIRIUS 2	LA PEROUSE 2
Session 1 9.00–10.30 am	Innovation: Collaboration for growth in student performance Ms Lesley Gardner <i>Xavier High School, Albury, NSW (45 minutes)</i> Bridging Spoken and Written Narratives Mr Matt Thomson <i>Charles La Trobe College, Vic. (30 minutes)</i>	Assessment Reform in Stage 5 and Record of School Achievement Assessment Judgements Ms Karen Endicott <i>Sarah Redfern High School, Minto, NSW (45 minutes)</i> Teaching Judgements in Maths: A functional data base Ms Michaela Wright <i>Schools Development Group, WA (30 minutes)</i>	VALID: Validating school-based assessments using online, on-demand multimedia assessment tools for Years 6 to 10 Miss Joanne Sim <i>DEC, NSW (45 minutes)</i> Uber, Coffee and the Death of 'Mass': What the unschool community can teach educators about teaching, learning and assessment in a post-industrial context Dr Rebecca English <i>Queensland University of Technology (30 minutes)</i>	How Strong is Your School as a Professional Community? Dr Lawrence Ingvarson <i>ACER (45 minutes)</i> Facilitating Teachers' Use of Performance-based Assessments through the Formation of Professional Learning Communities Across Schools Professor Derek Cheung <i>The Chinese University of Hong Kong (30 minutes)</i>	Getting Data to Teachers to Change Teaching Programs: A school's journey Mr Matthew O'Brien <i>Brisbane Boys' College, Qld (45 minutes)</i> The Proof of the o-Mlit is in the Testing Dr Kellie Buckley-Walker <i>University of Wollongong, NSW (30 minutes)</i>
10.30–11.00 am	Morning Tea (Networking, Exhibitors' Expo)				
Session 2 11.00 am–12.30 pm	Elaborating Responses to Fraction Assessment Tasks Reveals Students' Algebraic Thinking Ms Cath Pearn <i>ACER (45 minutes)</i> Tickling a Sleeping Dragon: How adjusting and aligning testing and curriculum can maximise success in Mathematics Ms Sally Harris <i>Presbyterian Ladies' College, Vic. (30 minutes)</i>	It's in My Hands: A student-based approach to assessment Mrs Dena Reddan <i>St. Therese Primary School, Torquay, Vic. (45 minutes)</i> From Hindsight to Foresight: Investigating data strategies to improve student learning Mr Timothy O'Leary <i>Wesley College, Vic. (30 minutes)</i>	Using an Evidence-informed Approach and Instructional Rounds to Lead Accelerated Whole-school Scale Change Mrs Catherine Cox-Walliss <i>Mount Barker South Primary School, SA (45 minutes)</i> What Classroom Assessment Techniques Make the Difference? School beginnings with an end in mind Ms Melanie Clark <i>Dardanup Primary School, WA (30 minutes)</i>	Being the Best Learner You Can Be: A mind, brain and education program in operation Ms Donna Nitschke <i>DECD, SA (45 minutes)</i> Using Manipulatives and Guided Discovery Lesson to Assess and Improve Teaching and Learning Year 9 Mathematics: A lesson study Mrs Masjuwita Puteh <i>Rimba II Secondary School, Brunei (30 minutes)</i>	Empirical Evidence that Supports Changes to Pedagogical Practice and Track Learning Gains in Contemporary and Technology-enabled Learning Environments Mr Terry Byers <i>Anglican Church Grammar School, Qld (45 minutes)</i> Using Assessment Data to Close the Gap between Student Achievement in Investigation Tasks and Tests and Examinations at the Australian Science and Mathematics School Dr Bronte Nicholls <i>Australian Science and Mathematics School, SA (30 minutes)</i>
12.30–1.30 pm	Lunch (Networking, Exhibitors' Expo)				
12.45 pm	Leading Thinkers in Conversation Professor Geoff Masters AO with Dr Michele Bruniges AM and Sir Michael Barber <i>(Live stream – Endeavour Ballroom)</i>				
Session 3 1.30–3.30 pm	I've Got the Power in Auslan <i>(Restricted to 30 participants)</i> Miss Heulwen Sweet <i>Charles La Trobe P-12 College, Vic. (Workshop, 90 minutes)</i>	Activating Student Voice: Accelerating Improvement <i>(Bring your iPad to make the most of this workshop)</i> Mrs Deb O'Neill <i>Gilles Street Primary School, Adelaide, SA (Workshop, 90 minutes)</i>	Transforming Your Pedagogy through the Purposeful Use of Data Mrs Tania Leach <i>Education Queensland, Qld (Workshop, 90 minutes)</i>	Maximising Student Success in Senior Secondary Education Ms Jan Raymond <i>SACE Board of South Australia, SA (Workshop, 90 minutes)</i>	Using Technology to Promote Formative Assessment in Secondary Mathematics: Advantages for teachers and learners Mr Roger Wander <i>Melbourne Graduate School of Education, Vic. (Workshop, 90 minutes)</i>
3.00–3.30 pm	Afternoon Tea (Networking, Exhibitors' Expo)				
Session 4 3.30–5.00 pm	Initiating and Sustaining an Effective Whole-school Approach to Numeracy through Formative Assessment Mr Rob Proffitt-White <i>DET, QLD (45 minutes)</i> Obtaining Reliable Feedback from your Students about your Teaching Mr Ed Roper <i>Brisbane Grammar School, Qld (30 minutes)</i>	Reconceptualising Entrepreneurial Learning and Assessment within General Capabilities in the Australian Curriculum: An innovative approach to learning and teaching for the future Dr Shantha Liyanage <i>DEC, NSW (30 minutes)</i> Pushing the Creative Boundaries in Student Assessment Mrs Catherine Eppen-Van Der Aa <i>Mandurah Baptist College, WA (30 minutes)</i>	The Progressive Capacity Matrices Mr Anton Reiter <i>Effective Curriculum Ideas, Vic. (Workshop, 90 minutes)</i>	Everything is Formative! Creating a Culture of Peer and Self-Assessment in Workplace Maths Mr Mark Sivills <i>Don College, Devonport, Tas. (45 minutes)</i> Teaching with GeoGebra versus Traditional Method Dr Pellumb Kllogjeri <i>University of Elbasan, Albania (30 minutes)</i>	

Conference Timetable

DAY 3

SATURDAY 23 MAY

8.30 am	Welcome Tea and Coffee (Networking, Exhibitors' Expo)				
9.00–10.30 am	Keynote: Empowering Teachers to Enhance Professional Practice and Student Learning Professor Jennifer Gore, University of Newcastle, NSW				
10.30–11.00 am	Morning Tea (Networking, Exhibitors' Expo)				
	ENDEAVOUR 1	ENDEAVOUR 2	ENDEAVOUR 3	SIRIUS 2	LA PEROUSE 2
Session 1 11.00 am–12.30 pm	Using the Quality Teaching Model as a Pedagogical Framework to Improve Assessment Tasks Mr Peter Clayden <i>Canberra College, ACT (45 minutes)</i> Working Together to Enhance Teacher Education: A collaborative project between Queensland College of Teachers and Queensland Deans of Education Ms Deanne Commins <i>Queensland College of Teachers (30 minutes)</i>	Kaleidoscope Landscape: Reframing our approach to teacher growth and development Dr Liz Criddle <i>St Stephen's School, Greenwood, WA (45 minutes)</i> Learning from Those Around us: Learning Walks and Watching Others Work Ms Judith King <i>Department of Education, WA (30 minutes)</i>	Low-Socio-economic Status Meets High Expectations: A research-led approach to successful student research Ms Ingrid Lees <i>Parafield Gardens High School, SA (45 minutes)</i> Instructional Practices Inventories: Quantifying and improving students' cognitive engagement – case studies from three Sydney high schools Ms Sabreena Taylor <i>Teacher Training Australia, NSW (30 minutes)</i>	Sleep for Wellbeing and Academic Performance Mr Toby McIlrath <i>Rhinomed and Camberwell South Primary School, Vic. (45 minutes)</i> Flipping the Textbook Mr Matthew Cunnane <i>Noosa Pengari Steiner School, Qld (30 minutes)</i>	Using Data for Effective School Improvement Mr Robert Marshall <i>ACER Institute (45 minutes)</i> Bringing Data to Life Ms Brenda Little <i>Beenleigh State High School, Qld (30 minutes)</i>
12.30–1.30 pm	Lunch (Networking, Exhibitors' Expo)				
1.30–2.30 pm	Panel Session: Planning, conducting and reporting on your school-based research Professor Marie Brennan, Victoria University; Ms Linda Fox, Port, Augusta / Quorn Partnership, DECD, SA; Ms Jo Earp, <i>Teacher Magazine</i> Chaired by Dr Elizabeth Hartnell-Young, ACER				
2.30–3.00 pm	Teachers Mutual Bank Awards Ceremony and Conference Close				

Delegates are welcome to move between rooms mid-session to attend different presentations, assuming there is adequate seating available in the session the delegates wish to attend. Please respect the presenters and other participants by keeping conversation to a minimum when moving between rooms mid-session.

The Conference Timetable lists first authors only for each session. Please see the individual session pages and the presenter biographies in the Conference Proceedings for full details.

KEYNOTE

Day Three Saturday 23 May

9.00 am – 10.30 am

Endeavour Ballroom

Keynote: Empowering Teachers to Enhance Professional Practice and Student Learning



Professor Jennifer Gore,
University of Newcastle, NSW

Abstract

Improving the quality of teaching and learning is a global concern echoed with growing urgency in a vast array of political and educational circles. This presentation focuses on an approach to systematic practitioner inquiry, known as Quality Teaching Rounds, that empowers teachers to enhance their professional practice through a collective focus on the impact of their teaching on student learning. Combining the benefits of professional learning communities, instructional rounds and the Quality Teaching framework, Quality Teaching Rounds empower teachers in researching and refining their own practice. Central to the success of the approach is the way in which the pedagogical framework provides a conceptual basis and shared language for clinical analysis of practice in ways that support teachers to engage in continuous improvement of teaching, with positive consequences for their students. The power of this approach will be demonstrated using evidence from NSW and ACT schools. The data indicate significant impact on the quality of teaching being produced, the level of productive collaboration among teachers, and student outcomes (using data from the National Assessment Program – Literacy and Numeracy). Interviews with teachers and principals corroborate these positive impacts, with many describing Quality Teaching Rounds as the most powerful professional development in which they have participated. With systematic observation and feedback on teaching high on national and international agendas, it is particularly important

to note that these encouraging results demonstrate how teachers can be supported to produce high quality teaching for all of their students.

Professor Jennifer Gore recently completed six years as Dean of Education and Head of School at the University of Newcastle. She is currently Director of the Teachers and Teaching Research Program.

Her research related to Quality Teaching has led to significant professional development work with teachers across government, Catholic and independent schools in Australia. Her latest research on Quality Teaching Rounds is having wide impact on policy and practice, with results showing that teachers engaged in collaborative analysis of teaching and assessment practice are seeing improvements in teaching quality, teacher satisfaction, student learning outcomes and equity.

With a background in physical education teaching in Adelaide, a Masters degree from the University of British Columbia (1983), and a PhD from the University of Wisconsin-Madison (1990), Professor Gore's research has focused on such topics as teacher socialisation, alternative pedagogy, power relations in teaching, teacher education reform, pedagogical reform and teacher development. Her publications have been cited very widely and her large-scale studies have attracted more than \$4.1 million in research funding.

She has held executive roles for the Australian Association for Research in Education, the Australian Council of Deans of Education, and the NSW Deans' Council. She was Associate Editor for *Teaching and Teacher Education: An International Journal of Research and Studies* and is on the Editorial Boards of the *Australian Journal of Education* and *Sport, Education and Society*.

PLENARY SESSIONS

Day One Thursday 21 May

4.40 – 5.30 pm

Endeavour Ballroom

Learning More about Feedback from Education and Neuroscience



Professor John Hattie, Director, Melbourne Educational Research Institute at the University of Melbourne, VIC

Professor Pankaj Sah, Deputy Director (Research), Queensland Brain Institute, University of Queensland, QLD

John Hattie is an education researcher whose meta-analysis of research shows that feedback has an effect size of 0.73, which is quite significant. Pankaj Sah is a neuroscientist who studies the role of the amygdala in learning. In this session they come together to discuss how teachers can benefit from the work being done in the Science of Learning Research Centre (<http://slrc.org.au/>).

Projects are under way to better understand how learners process feedback, whether from people or within computer-based intelligent learning environments. Researchers are tracking students' alertness and stress levels by measuring changes in their heart rate and skin sweating, which are controlled by the brain. However, as Hattie argues, a most important form of feedback is from students to teachers, which can be collected formally and informally, on a daily basis or at particular points in time.

The audience will have a chance to pose questions during the session, and if you have more questions afterwards, please visit the video booth and record them. ACER will endeavour to have them answered!

THE SCIENCE OF LEARNING AND RESEARCH CENTRE

We are delighted that the Science of Learning Research Centre is holding its Big Day Out concurrently with EPPC.

The Science of Learning Research Centre is a Special Research Initiative of the Australian Research Council. In the Centre, researchers in education, neuroscience and cognitive psychology are working together with teachers to understand the learning process.

Please take this opportunity to view the posters and meet the people who undertake this important research work.

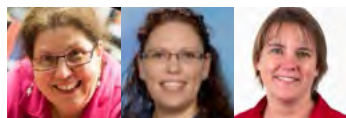
For more information, visit <http://slrc.org.au>

Day Three Saturday 23 May

1.30 – 2.30 pm

Endeavour Ballroom

Panel Session: Planning, Conducting and Reporting on Improvement Projects



Professor Marie Brennan, Professor of Education, Victoria University

Linda Fox, Department for Education and Child Development, SA

Ms Jo Earp, Editor, *Teacher Magazine*, ACER

The Excellence in Professional Practice Conference is designed to share and promote systematic 'improvement research' undertaken by teachers and leaders. Improvement research is focused on improving the quality of teaching and learning – and thus outcomes for learners – through systematic practitioner inquiry. It often involves innovation and practical educational problem solving. In this session a panel of experienced teachers and researchers, with an editor, will provide advice and answer questions covering:

- ways to design investigations of professional practice
- how to collect data capable of showing whether and how changes in practice are making a difference
- documenting and reflecting on improvement efforts
- sharing the outcomes of improvement projects by contributing to articles and presenting at conferences and online.

The goal is to build a robust profession-wide knowledge base about effective school and classroom practices, and to support practitioner networks with a commitment to improved student outcomes.

Day Three Saturday 23 May

2.30 – 3.00 pm

Endeavour Ballroom

Teachers Mutual Bank Awards Ceremony

As in 2014, Teachers Mutual Bank is providing teachers and school leaders with recognition through Excellence in Professional Practice Outstanding Presentation Awards. In a two-stage procedure, a number of candidates were selected through the peer review process, and their presentations were attended by a reviewer. The criteria included an appropriate title and clear links to the conference focus; clear problem identification; description of what was done to address the identified problem and the outcomes achieved; reflection and implications for others. We congratulate the Award winners who have produced high quality practitioner research.

TEACHERS' MUTUAL BANK INDIGENOUS EDUCATOR SCHOLARSHIP

We are pleased to announce that Deanne Aarts has been awarded the 2015 Teachers' Mutual Bank Indigenous Educator Scholarship.

Deanne is Assistant Principal of Swansea Public School, Lake Macquarie, NSW, which is about to embark on a journey of school-wide assessment reform.

'Attending the Excellence in Professional Practice Conference would be very beneficial in this journey, particularly as we are yet to jump into the vehicle that will transport us to our destination,' Deanne explains.

'As an Assistant Principal, I will be better equipped to guide the revision and co-ordination of student performance and program evaluation using student assessment data to improve teaching practice. I see my attendance at the EPPC as a tool that I can use to inspire and enable colleagues to improve their own professional practice,' she says.



PAPER PRESENTATIONS

Using Feedback to Build a Growth Mindset: A whole-school initiative

Dr Jane Mitchell, Lecturer, Charles Sturt University, NSW

Mr Mark Picman, Curriculum Leader, La Salle Academy, Lithgow, NSW

Ms Megan Gerathy, English teacher, La Salle Academy, Lithgow, NSW

Ms Sara Murray, Lecturer, Charles Sturt University, NSW

Abstract

This presentation is about a whole-school initiative based on student feedback and aimed at promoting a growth mindset in students. Teachers from La Salle Academy (Lithgow) worked in partnership with researchers from Charles Sturt University to develop faculty-based projects. Each project involved the design, implementation and evaluation of a formative feedback strategy. A range of innovative and worthwhile feedback strategies were developed. This session will present the key concepts and data related to the feedback strategies developed in Year 9 English, Year 11 Biology and Year 7 Technological and Applied Studies.

The idea of using feedback as a means of promoting a student growth mindset was developed at a professional learning day held in December 2013. The focus on feedback aligned with school and faculty priorities related to assessment and improving student learning outcomes. In 2014 each faculty at La Salle Academy committed to developing a feedback project.

Each project involved: gathering an initial set of data to establish a baseline in relation to student mindset and/or student knowledge and skill; implementing a sustained feedback strategy that was part of a unit of work; and collecting data at the conclusion of the project to evaluate the effect of the feedback strategy on student learning and/or student mindset.

The development of feedback projects has had a significant impact at the classroom and school level. Data from projects include: student questionnaires; student learning logs with teacher feedback; student writing samples with teacher feedback and student response; and teacher reflections. The projects demonstrate the value of guided feedback in improving student mindset, effort and learning outcomes. The presentation will include an overview of useful feedback resources that can be adapted and used in a range of curriculum areas.

Feedback: Focus on creating critical reflection in students



Mrs Christine Hills, Principal, Gladstone State High School, Qld

Abstract

Despite successive years and multiple schools focusing on writing in school improvement agendas, there seems to be inconsistent improvement achieved. The writing task in the 2014 National Assessment Program – Literacy and Numeracy (NAPLAN) was heralded as ‘tricky, confusing and badly formulated’. Yet the students at Glenmore State School went against the national trend with a 90% better improvement in relative gain from Years 3 to 5 than the national rate of gain.

How did the students at Glenmore – a school in the eighth percentile of disadvantage – achieve this? The students are explicitly taught how to evaluate and analyse their own writing samples as part of the feedback process. Using child-friendly rubrics, children identify strengths and weaknesses in their writing and use the Harvard-derived Collins Writing Program’s Focus Correction Areas. The Writing Program emphasises writing as a daily event. From Prep, students are taught the principles of self-assessment and reporting to teachers using the child-friendly rubric. Teachers can focus student attention on specific elements of writing – sentence structure, persuasive devices or character description.

Since the inception of this project in 2012, the mean NAPLAN score of students in Year 3 has risen 82 points and 46% of Year 3 students performed in the top two bands of achievement in 2014. In 2015 the program is being undertaken at Gladstone Secondary High School, a 1600-student Years 7 to 12 campus in the industrial city of Gladstone. Students are able to use focused correction areas to value-add to their work and become more confident writers.

This presentation will identify high-yield strategies that enable students to become critical analysers and effective assessors of their writing. It will open up possibilities for encouraging meaningful writing opportunities across curriculum areas.

Teaching to Learn, Learning to Teach! Using data to inform teaching practice in literacy and improve student learning



Mrs Jane Denny, Educational Officer – Numeracy, Catholic Schools Office, Broken Bay, NSW

Ms Virginia Outred, Educational Officer, Catholic Schools Office, Broken Bay, NSW

Abstract

The Diocese of Broken Bay has a range of tools to track student progress in literacy. The tools provide rich data that assist school leaders and teachers to tailor professional learning so each student progresses as expected. These tools include: targets for minimum standards in reading; the Observation Survey; PAT Reading; and use of the Literacy Continuum. In the case study school, these tools revealed a persistent trend of a high number of students not achieving expected levels in reading, less than expected growth in aspects of literacy in Kindergarten, Year 1 and beyond, and a high number of students out of class during explicit instruction.

System literacy leaders were engaged to work with school leaders to identify both formal and informal practices that would contribute to student achievement. A professional learning plan was developed to improve teacher pedagogy and practice as 'First Wave' instruction. Key components of the plan included: the appointment of literacy coaches; a recommended daily English block structure; professional learning for teachers; the introduction of high yield strategies such as data walls; Instructional Walks and Talks; and Collaborative Analysis of Student Learning meetings. The plan also included formal tracking of students and the setting of targets.

Data collected related to both teaching practice and student achievement. Teaching practice data included: leaders' notes from Instructional Walks and Talks; records of Collaborative Analysis of Student Learning meetings; and records of professional learning for literacy leaders and for staff. Data related to student achievement included: reading levels; National Assessment Program – Literacy and Numeracy (NAPLAN); PAT Reading; Observation Survey results; and tracking on the Literacy Continuum.

Learnings and implications included: the need to appoint a dedicated literacy coach; the importance of leadership and relational trust; effective use of data; the necessity of engaging expertise; professional learning at a school and individual level that included modelled teaching in classrooms; and the establishment of routine practice leading to adaptive practice.

Using Formative Assessment to Help South Asian Ethnic Minority Students Learn Chinese as a Second Language



Dr Zhihui Kou, Lecturer, The Chinese University of Hong Kong

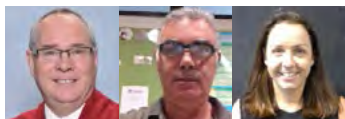
Abstract

Chinese is a lingua franca in Hong Kong. Secondary school students from other countries such as India and Pakistan may take Chinese as a second language. However, research has revealed that they have difficulties in writing Chinese characters, mastering Chinese grammar rules, and comprehending Chinese readings. This paper aims to report how a collaborative research project was conducted in school to enhance students' Chinese language literacy. The project was guided by two research questions: How can formative assessment be used to understand where students are in their learning? How can formative assessment be used to capture students' growth over time?

In the first phase of this project, formative assessments were built into the Chinese language lessons in September 2014. A total of 20 Secondary-1 ethnic minority students (home languages of Hindi or Urdu) were involved. Besides daily homework (e.g. copying Chinese characters, dictation), periodic formative assessments were carried out and focused on the four key skills of language learning: listening, speaking, reading and writing. Additional data were collected by classroom observations and interviews. The second phase of this project began in January 2015 and will last six months, focusing on Chinese reading comprehension and writing of complex sentences.

The assessment information was used to understand student progress and to facilitate the teachers to modify their teaching strategies (e.g. giving more examples to illustrate the usages of Chinese characters). It was found that the students had progressed satisfactorily. For example, they recognised that Chinese characters are logographic writing and managed to memorise about 50 Chinese characters with different forms, sounds and meanings.

Technology, Evidence-based Assessment and Learning for All in Maths



Mr Paul Sheedy, Principal, St Paul's Primary School, Coburg, Vic.

Mr Frank Cananzi, ICT/Curriculum Design Leader, St Paul's Primary School, Coburg, Vic.

Ms Leah O'Shea, Senior Curriculum Leader in English, St Paul's Primary School, Coburg, Vic.

Abstract

The problem: How do we improve in all elements of Maths learning and teaching, assessment, planning, implementation and reporting through the creative use of technology, especially in the gathering of evidence and analysis of data?

We have developed a whole-school approach to evidence-driven assessment that continually informs the teachers of the point of intervention for each child, especially in Maths. It also involves the use of One Note, Excel spreadsheets and digital folders for every child, and involves creative use of staff time and skills. We have also developed partnerships with key technology providers (e.g. Toshiba) to develop products that suit our needs.

The system we continue to develop meets the needs of all children regardless of their learning level. We do this by:

- placing trust in the AusVELS, scaffolding the learning and teaching requirements (descriptors) and the measurement tools (standards)
- creative use of staff and spaces that allows for dynamic, explicitly focused teaching groups
- resisting the urge to let 'programs' become curriculum
- giving feedback to students related to their Zone of Proximal Development (ZPD) and allowing them to set goals making them more aware of their success criteria
- student-centred learning not teacher-centred teaching
- understanding the importance of formative assessment evidence in planning
- strong reliance on the collection and analysis of evidence for summative assessment
- diligent analysis of NAPLAN and other objective 'in-house' data informing school-wide improvement.

Using Data from the Mathematics Assessment Interview to Improve First Wave Instruction



Mrs Bianca Witney, Educational Office – Numeracy, Catholic Schools Diocese of Broken Bay, NSW

Abstract

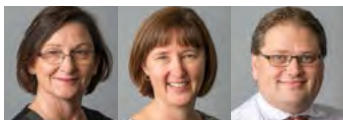
The Diocesan School System of Broken Bay implements the Mathematics Assessment Interview (MAI) to collect systematic K–6 data in 37 primary schools. The initial interview was developed by researchers during the Early Numeracy Research Program (Clarke et al., 2002) and refined by Gervasoni et al. (2011). The data collected from the MAI are used to identify students who may be mathematically vulnerable; they highlight that there are students exiting Kindergarten who have not reached curriculum expectations in Mathematics.

The Broken Bay system of schools has trained 88 specialist teachers in the Extending Mathematical Understanding (EMU) Specialist course, developed by academics from Australian Catholic University. The course was conducted over a three-year period, facilitated by Education Officers and Dr Ann Gervasoni.

Pre- and post-student assessment data illustrate the impact of the Second Wave intervention. Trained specialist teachers within schools are also influencing teaching practice through an emphasis on First Wave intervention. This effect is evident from whole-school data collected in February and tracked longitudinally.

One of the major learnings over the three-year period is the importance of effective First Wave instruction in all classes. Raising the achievement of students who are mathematically vulnerable must be within the context of a whole-school approach. Improvement is achieved through the expertise of specialist teachers leading effective professional learning through research-based, high yield strategies.

From Acquisition to Mastery: How reading profiles impact on outcomes for struggling students



Mrs Susan Woolfenden, Leading Teacher, Catholic Education Diocese of Parramatta, NSW

Ms Gail Story, Leading Teacher, Catholic Education Diocese of Parramatta, NSW

Mr Shane Morris, Project Leader, Catholic Education Diocese of Parramatta, NSW

Abstract

In 2013 Catholic Education Diocese of Parramatta (CEDP) designed and delivered a Third Wave reading intervention. System Intervention teachers observed that in a typical reading lesson in a classroom, teaching moves on when most of the class have learnt a key reading skill. However, struggling students are still acquiring the skill and never move through the phases of learning to 'generalisation'.

The hypothesis was formed that teaching reading skills to mastery would result in students maintaining and generalising learning beyond the intervention. A profiling tool was devised to monitor student growth and provide feedback to teachers to enable a personalised intervention for each student. The tool allowed teachers to monitor growth through the phases of learning – acquisition, fluency, maintenance and generalisation – and allowed for vertical tracking of sequential skill development and horizontal tracking through the phases of learning. Initial plotting of students showed that most were in the acquisition phase for many skills and there were significant gaps, particularly for older students.

Two case studies of individual students in different schools will be presented. Student reading growth will be shown on the profiling tool. This will be supported by evidence from the Early Years Assessment data (Clay, 2005) that are gathered by classroom teachers. This shows the generalisation of skills to the classroom. Data will also show the impact on the student's concept of self. Qualitative data show evidence of improvement in the strands of self concept described in Hattie's Rope Model of Self Concept. Key learnings and implications are: a modern form of direct instruction can improve learning outcomes for struggling students; students need deliberate practice to ensure they master critical skills; and small changes can impact on a student's learning and their concept of self.

Navigating the Literacy Learning Journey from Early Years to Year 3 and Beyond



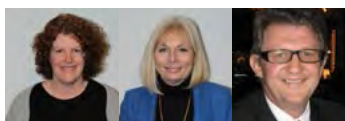
Ms Evelyn Terry, Director, School Academic Support Services, Qld

Ms Amy Woodgate, Assistant Head of Junior School – Teaching and Learning, Somerville House, South Brisbane, Qld

Abstract

While working within the literacy framework of the Australian Curriculum, experienced Year 3 teachers observed a disparity between literacy assessment results and the quality of the students' written responses – the application of literacy skills within meaningful tasks. The specific learning needs required when transitioning from Early Years to Year 3 and beyond were not able to be identified and monitored using the current assessment tools. The teachers wanted data to inform their teaching practice and enhance each student's literacy journey. Student work samples were discussed with an educational speech pathologist in order to develop a deeper understanding of the literacy learning terrain, especially the interrelationship of literacy and complex language development in meaningful curriculum tasks in Year 3. The team researched and trialled assessment tools that could quantify, qualify and monitor the changes in language complexity in literacy tasks. The existing progressive assessment cycle was modified to include a new assessment tool. Data were analysed across year levels in terms of language development and literacy skills. Individual student results were plotted against the increasing level of literacy skills and language complexity. Results showed that student difficulties seen in the classroom by the teachers were not literacy-skills based but aligned with increased language complexity. There is a need to continually monitor students on their individual learning journeys. Teachers must be open to increasing their understanding of the learning terrain and be flexible and modify assessment and teaching practices. The language growth required for meaningful literacy responses needs to be monitored in each student. The curriculum-based written responses across subject areas, not just English, will be impacted when students have not developed sufficient written language skills. Appropriate data enable the creation of a road map for each student's learning journey.

Using Assessment Data to Improve Reading Comprehension Instruction and Evaluate its Effectiveness



Ms Julia Blakey, Literacy Coordinator, St Mark's Primary School, Dingley, Vic.

Mrs Debbie Darvell, Principal, St Mark's Primary School, Dingley, Vic.

Mr Philip Holmes-Smith, Director, School Research Evaluation and Measurement Services, Vic.

Abstract

Using Year 3 to Year 5 National Assessment Program – Literacy and Numeracy (NAPLAN) growth data from 2010 and 2011, we began to see a trend in our reading data that reflected that our 'average' students were making adequate progress but we needed to 'lift' the lower and upper quartiles.

Starting in 2011–12, the school started to build teacher capacity using First Steps to familiarise teachers with the 12 main comprehension strategies; Strategies That Work to plan lesson sequences and assess student learning; and Fountas and Pinnell to consolidate the comprehension process (within the text focusing on monitoring and fluency, beyond the text working towards inference, and about the text working towards critical and evaluative reading). We also joined the University of Melbourne's Literacy Assessment Project and used its online Assessment Research Centre Online Testing System reading comprehension tests to place students on a continuum of reading starting at Level A (word level comprehension) progressing through to Level J (evaluative reading). Additional strategies were added in 2013 and 2014 including using PAT Reading and Literacy Assessment Project data to gauge each student's Zone of Proximal Development (ZPD) to facilitate learning based on each student's need and readiness to learn.

In 2012, 2013 and 2014 we collected PAT Reading data from Year 1 to Year 6 students to monitor between-year growth; we continued to monitor Year 3 to Year 5 NAPLAN reading growth; and we have begun using the Fountas and Pinnell Benchmark Assessment Kit with the aim of improving and monitoring individual student performance in reading comprehension. Using

sophisticated software we have been able to show large improvements in reading comprehension including 1.48 times more growth on NAPLAN reading than the Victorian state average.

We conclude that improving reading performance requires a multifaceted approach that includes professional development for teachers around researched-based strategies and the ongoing assessment of learning to both improve comprehension instruction and evaluate its effectiveness.

The Year 10 Book Project: Improving motivation and achievement through publishing



Ms Shelley Davidow, High School English Teacher, Noosa Pengari Steiner School, Doonan, Qld

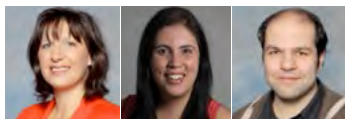
Abstract

This presentation focuses on the initial problem of motivation, engagement and achievement in high school English. Since English is a mandatory subject, students are not necessarily invested in the subject, except for the purpose of achieving a decent grade. My hypothesis: a publication or book project in Year 10 English would give students agency, and improve motivation. The goal was for students to write and edit short stories of publishable standard. The outcome: publication by our in-school press.

Because our English curriculum is progressive, the assumption is that a C grade to a C grade over time is a standard improvement. The baseline data for Year 10 in Semester 1 delivered the usual spread of As, Bs, Cs, Ds. The intervention of the book project yielded positive results. There was an overall increase in standards. Compared with Semester 1 grades, 33% per cent of Year 10 English students at the end of Semester 2 moved up one full standard, 20% moved up two full standards and the rest maintained their standard or improved by half a standard or more.

The book project intervention had a greater effect on student learning than any other program run previously or concurrently within the English department.

Adopting a Growth Mindset: Using student data to improve learning outcomes in Mathematics



Mrs Kimberley Morgan, Classroom Teacher, St Monica's Primary School, Footscray, Vic.

Mrs Marielouise Phillips, School Adviser – Mathematics, Catholic Education Office, Melbourne, Vic.

Mr Joe Salpietro, Classroom Teacher, St Monica's Primary School, Footscray, Vic.

Abstract

Through our school review it was highlighted that student Mathematics data (internal and from the National Assessment Program – Literacy and Numeracy) was consistently trending downwards over a number of years. So too, survey data indicated that teachers' level of confidence and content knowledge was lacking in this area. We were also faced with the challenge of identifying and designing an effective learning and teaching program, given that we have a high percentage of English as an Additional Language students.

We engaged in partnership with Catholic Education Office Melbourne (CEOM) to develop and design a plan of action to address these issues. Over two years CEOM personnel worked with the school closely. It was identified that we needed to understand the demands of the curriculum as well as the content. Using both AusVELS and the CEOM Key Ideas document, teachers developed rubrics that described different stages of learning for various concepts. This underpinned the development of a school-based continuum, which we then used to measure growth.

Tasks that aligned with the continuum enabled teachers to identify what level students were at and to design differentiated units of work to cater for their varying needs. Throughout the units students and teachers could easily distinguish when various skills and knowledge had been demonstrated. In addition, student achievement could be mapped along the continuum, resulting in teachers being able to adjust their programs accordingly.

Approaching assessment with a growth mindset enabled teachers to target each child according to identified needs and develop engaging units of work. As a result, school leadership and teachers have observed a positive shift in the way students interact with Mathematics and the way they approach their learning in this area. Since 2011 data trends have also shifted demonstrating an overall increase in the level of student mathematics outcomes.



A Reading Mission Accomplished: How a focus on research, evidence and 'task predicts performance' achieved the greatest growth in reading



Ms Linda Fox, Coordinator of Primary Australian Curriculum, Port Augusta/Quorn Partnership, SA

Abstract

In my classroom of 25 students in a most diverse and complex school and classroom context, diagnostic testing showed that 70% of students were significantly below in their prescribed reading level (PAT Reading and Running Records). Furthermore, perception data and observational evidence indicated students were not engaged in their learning. At the school and regional level, improvement plans identified a priority of achieving the greatest growth in reading. An effective strategy was therefore needed to support teachers and students so they could achieve this mission impossible.

Under the direction of the regional office, the Task Predicts Performance project was initiated and this involved teachers implementing an action research and learning design approach that integrated selected high influence strategies and principles published in the research by Hattie, Elmore, Dweck, Bernhardt and the South Australian Teaching for Effective Learning framework. The approach required teachers to participate in a five-week cycle of data collection, analyses and seminar reflection for evaluating students' achievement and teachers' implementation.

Some strategies included:

- By the teacher – explicitly teaching students the understanding of task challenge and skill as well as setting, monitoring and supporting challenging tasks and targets aligned to standards.
- By the students – prediction of performance within a task target and game theory context, including ongoing self-reporting and monitoring.

The end-of-year results have shown 70% of students in my classroom achieving above their prescribed reading level. This growth was reported as being the largest improvement across the school in reading. In addition, perception data collected indicated that students felt engaged and reported that they were 'in control of their learning'. The task of best integrating data analysis and research-informed processes into pedagogy is one that all teachers at my school and teachers from other sites have now chosen to accept – a most unexpected mission accomplished.

Putting Faces to the Data: Empowering students to engage with their learning



Ms Sheri Evans, Deputy Principal, Medina Primary School, WA

Abstract

Medina Primary School is a small school full of passionate educators. It has the lowest Index of Community Socio-Educational Advantage (ICSEA) ratings (783) in Perth Metropolitan Region and approximately 40% of students are from Aboriginal and Torres Strait Islander background. Many of the students from the school experience severe poverty with generational drug and alcohol abuse, violence, homelessness and neglect playing a significant role in their lives. At the beginning of 2013, 60% of K–6 students were reading and writing at a five-year-old level or not at all.

A multifaceted and comprehensive program of professional development, disciplined dialogue, classroom observation and coaching was developed to promote strategies that would accelerate student learning. One element of this program was a school-wide focus on data and making the learning of the students visible to the whole school community including students, teachers, support staff and parents. SMAT (smart, measurable, aspirational and timely) targets were developed where 100% of students were expected to achieve goals with 'no excuses'.

Within nine months of the program being implemented the number of students reading and writing at or below a five-year-old level decreased to 20% and the number of students who were unable to read at all was halved. Student engagement increased significantly with students taking on an active role in setting targets, evaluating their learning and monitoring their progress towards their goals. This has also had long-term effects in developing a growth mindset (Dweck, 2013) in the students and community.

Making learning visual, adopting targets using high expectations and involving school communities in monitoring student progress can have profound effects on the engagement and learning of all students. Sheri Evans is now sharing these strategies with teachers in remote and regional areas of Western Australia with similar effects on achievement of students from disadvantaged backgrounds.



Empowering Local Learners: A pre-school to secondary approach to improving executive functioning through a Mathematics lens



Mr Shane Loader, Partnership Numeracy Coach, Port Augusta/Quorn Partnership, SA

Ms Kristin Vonney, Mathematics and Science Teacher, Flinders Centre for Science Education in the 21st Century, Flinders University, SA

Ms Deb Lasscock, Primary School Teacher, Flinders Centre for Science Education in the 21st Century, Flinders University, SA

Ms Daniela Leone-Welfare, Primary School Teacher, Flinders View Primary School, Port Augusta, SA

Mr Troy Welfare, Focus Teacher: Empowering Local Learners Project, Flinders View Primary School, Port Augusta, SA

Abstract

Recent educational neuroscience has established the critically important link between executive functioning and student achievement. Question analysis of NAPLAN Numeracy and PAT Maths results showed that our students had difficulty with higher-order mathematical questions requiring problem solving and reasoning. We identified the need to move teaching practices from a narrow focus on fluency to one emphasising the development of students' executive functions as these underpin students' problem solving and reasoning skills.

Established in 2013, the Empowering Local Learners Project is an innovative and diverse collaboration between the partnership of 17 public schools and pre-schools in Port Augusta and Quorn and the Flinders University Centre for Science Education in the 21st Century. Focus teachers from each site work with a cognitive neuroscientist and Flinders University staff who are highly proficient in translating the theory into effective classroom practice. The model incorporates professional learning, class modelling, reflection and collaborative planning. The focus teachers implement the learning from these sessions in their own classes and share their learning with colleagues. This project has shown a significant shift in practice for the focus teachers. Completed lesson planning templates and student work samples have shown successful integration of instructional practices that require quality questioning and task design. Student perception data have shown that students are finding lessons more engaging and are increasingly rating Mathematics as one of their favourite subjects. An internal evaluation of the project has shown that this partnership approach is responsive to the diverse range of educational contexts from birth to Year 12. We have learnt that the transmission of this pedagogy to other subject areas is also occurring. Also, although observation processes have been effective in acquiring initial familiarity with the practices, systematic and deeper planning for instruction using executive functions as a base is vital for embedding these practices long-term.

Why Does He Keep Doing That? Utilising Functional Behaviour Assessments



Ms Aurora Alonzo, Clinical Supervisor, Woodbury Autism
Education and Research, NSW

Ms Rebecca Freakley, Teacher, Woodbury Autism
Education and Research, NSW

Abstract

Behaviour can be easily defined as what a person is doing rather than what they are not doing. We observe and engage in a range of behaviours daily. Teachers in particular encounter behaviours that are often labelled as 'good' and 'bad'. Typical children, and those with disabilities, will engage in inappropriate behaviours during the course of their schooling. These behaviours can increase over time and are often a barrier to learning. All behaviours serve a particular function and being able to identify this function is the first step to understanding why it continues to occur.

As a school, Woodbury works with students with autism who engage in a variety of inappropriate behaviours. We utilise a process called Functional Behaviour Assessment (FBA) to identify the function of behaviour, develop a plan which aims to decrease that behaviour and teach new alternative behaviours. A target behaviour is first defined, and then through intensive data collection and in-class observation we determine the function of that behaviour by graphing and analysing that data. While we often need to take different types of data, one form is always needed – narrative Antecedent-Behaviour-Consequence data. These are the most valuable data needed to determine the cause of the behaviour. By using a Functional Behaviour Assessment to analyse students' behaviour, we are able to develop highly effective, easy-to-use behaviour intervention plans.

These interventions have proven to show changes in students' behaviours – decreases in inappropriate behaviour and increases in alternative behaviours. We are essentially aiming to break through the barriers to increase the students' opportunities to learn effectively. To demonstrate this method to our audience we will be discussing the data collection method and using it to analyse behaviour(s).

Learning Without Limits: A developmental approach to learning and assessment



Mrs Heather De Blasio, Director of Learning and Teaching Excellence, Wilderness School, Medindie, SA

Abstract

Data from standardised tests and Year 12 results reveal two stories. One of brilliant achievements, and one of uneven levels of growth. This has posed a challenge to the school's leadership team, particularly as the mission of the school is to enable each girl to be the best that she can be.

In response to this challenge, a developmental approach to learning and assessment, based on the research led by Patrick Griffin at the Assessment Research Centre at the University of Melbourne, is being introduced. A collaborative relationship has been established with Michael Francis from the ARC, who has been engaged to deliver a series of whole-school professional learning sessions and small group workshops in 2015 and beyond.

All teachers are engaged in writing developmental progressions for the subjects they teach. These will be used to identify where each student is situated on the continuum, as well as the zones of proximal, actual and future development. From here, teachers will provide individualised feedback to students regarding where they are at, where they are going and how to get there. While at the time of writing we do not yet have any data on the program's impact on student outcomes, we do know that there has been a significant change in teachers' attitudes, with large numbers of staff enthusiastic about the potential of this approach to transform the learning of our students, and bring about the enactment of our mission.

Our initiative represents the first time that the approach has been implemented at the whole-school level (Early Learning Centre to Year 12) and in a school already flourishing academically. As such, we believe that this initiative has significant implications for future directions in education, at a system, state and national level, with the potential to engender dramatic school improvement in any setting.

Teachers Teaching Teachers: Creating a sustainable in-house professional development program



Mrs Amy Dugré, Director of Technology, The Willows Community School, California, USA

Mr Jo Ben Whittenburg, Research and Continuing Education Coordinator, The Willows Community School, California, USA

Ms Lisa Rosenstein, Founding Head, The Willows Community School, California, USA

Abstract

Engaging and meaningful professional development (PD) is essential in maintaining a strong faculty, a cohesive, vibrant school culture and, above all, an elevated quality of student learning. However, limitations of budget and faculty free time remain obstacles for many schools, and PD is still mostly outsourced to experts leading traditional one-and-done workshops. Eight years ago, school leaders at the Willows Community School began noticing two distinct problems with this kind of PD:

1. persistent low attendance at traditional afterschool and summer workshops, and
2. teacher complacency with regard to innovative teaching and assessment practices.

In response, a robust and cost-effective in-house PD program was begun that fosters faculty collaboration, mentoring, and creative, research-driven curriculum development. A core component of this model involves teachers designing and implementing workshops for each other where they share information, resources, and strategies in a collegial, hands-on setting.

This 'teachers teaching teachers' model resulted in greater teacher engagement in school-based PD, an overall increase in attendance, and evidence of changes in teacher perspective as they developed an emerging growth mindset about their roles as teachers and learners.

Ultimately, through the development and implementation of this PD model, we have learned that utilising in-house expertise is not only more cost-effective but also potentially more powerful for improving the quality of learning taking place in our classrooms. We have found that teachers are more willing to innovate when taught by peers working in a similar context, and we have now begun to directly measure the results of these innovations on student learning school wide.

Using Teacher-designed Online Assessments to Drive Differentiated Instruction in Mathematics



Mr Anthony Speranza, ICT Learning and Teaching Leading, St Mark's Primary School, Dingley, Vic.

Mr Philip Holmes-Smith, Director, School Research Evaluation and Measurement Services, Vic.

Abstract

At St Mark's Primary School in Dingley, Victoria, teachers have developed an effective and efficient approach to teaching Mathematics in the senior years. For several years the school was faced with National Assessment Program – Literacy and Numeracy (NAPLAN) results that indicated average performance by students in Mathematics. The school desired to lift this by structuring an approach to Mathematics where the use of data was central to the teaching and learning process.

The teachers developed a scope and sequence of curriculum for each area of mathematics. They used them with students who were able to plot and track their learning at various stages of development. The teachers designed assessments using a free tool, Google Forms (a web-based data collector). Students take the online assessment as a pre-test of their learning. The data for 125 students are captured instantaneously, the test graded automatically, and the students are sent an email with their results. They use it to plot their current stage of learning on their scope and sequence. With the guidance of teachers, students make decisions and elect to position themselves at given stations to suit their progress. The teachers design activities, tasks, and pathways to deliver explicit instruction of skills and concepts in Mathematics over six lessons. At the end of the unit, the same assessment is taken as a post-test of learning.

The approach developed at the school has led to several improvements. Time and money has been saved, but most importantly, the strategy has demonstrated significant improvement in learning outcomes for students. Teachers calculate effect sizes for individual students and cohorts to track growth. The data correlate to more longitudinal sets, like NAPLAN and PAT Maths, which confirm the effectiveness of the approach. This presentation will unpack the data and explain the process employed in detail.

Designing a School Improvement Plan: Using a framework for effective school improvement



Mr Robert Marshall, Senior Project Director, School Improvement, ACER

Over the past two years, the Australian Council for Educational Research (ACER) has conducted school reviews drawing on Australian and international evidence, including ACER's research on effective practices in schools and by school leadership. The National School Improvement Tool framework has been used across Australia in government, faith-based and independent schools, and in international contexts. Our observations identify behaviours in many schools which have assisted school leaders in planning and communicating an explicit school improvement agenda. This session will assist participants to:

- identify key concepts and knowledge within a school improvement framework
- accurately map a school's teaching and learning across nine domains using the framework, and
- plan for effective school improvement with a sharp focus.

This enables schools to concentrate on implementation of positive action at the classroom and organisational levels.

Getting REEL: Richardson engaging effective learning by using high-impact instructional strategies to improve student outcomes



Ms Kristy Grady, Executive Teacher Professional Practice, Richardson Primary School, ACT

Ms Kate Davis, Executive Teacher Professional Practice, Richardson Primary School, ACT

Abstract

In 2012, data from sources including National Assessment Program Literacy and Numeracy (NAPLAN), Performance Indicators in Schools (PIPS), PAT Reading and PAT Maths indicated that students at Richardson Primary School were significantly below benchmark for their year level.

By analysing trend data and gathering work samples, professional learning teams were able to identify problems of practice and began researching high-impact instructional strategies. Classroom teachers used summative assessment but recognised the need to understand and implement tools that were timely and efficient at diagnosing a student's understanding at a given time, and could provide teachers with practical strategies for improving student achievement. Through professional learning teams, teachers researched evidence-based formative assessment strategies that could best identify individual students' knowledge and progress their learning in every lesson. The teams aimed to increase the educational achievement of every student in every lesson.

After more than two years of implementation, formative assessment has had a significant impact on improving student learning. This is demonstrated through work samples and data derived from summative and diagnostic tools such as PAT Reading, PAT Maths, and from NAPLAN and PIPS (Kindergarten entry and exit testing). Data demonstrate growth across reading and mathematics. They also demonstrate the narrowing of the gap between highest and lowest test results. All data sources including PAT, NAPLAN and PIPS demonstrate above-average growth.

Targeted Practice Towards the Improvement of Writing



Mr Matthew Smith, Director of Learning Engagement, Mount St Joseph Girls' College, Altona, Vic.

Abstract

In recent years Mount St Joseph Girl's College has transitioned its data program from one that used simple grade distributions to an approach that accounts for ability and growth. Data acquired from national testing, external and the College's own assessments are triangulated to give each student and class group an indicative measure of ability prior to starting a course and progress throughout the year. The emphasis is on subject teachers moulding their practices to accommodate the needs of their students.

The data suggested a low level of student growth in writing was an area of challenge for the three years prior to 2014. In 2014, the College became a member of the University of Melbourne's Network of Schools, and took a more dedicated approach to addressing the problem. The College had Years 7 and 8 students undertake the online and automated eWrite test provided by ACER, which provided a quick snapshot of students' strengths and weaknesses. The results suggested that the students had difficulties with punctuation and paragraphing.

A professional learning team began a pilot program that focused on the progress of writing for one Year 7 class. Each week students spent 20 minutes on a piece of writing based on a prompt, and received feedback from the professional learning team. The program was based on continual practice and feedback. The results were very exciting. The focus group recorded an average effect size of 0.61, much greater than the control groupings' average effect size 0.21. The project group made its largest gains in the areas of punctuation and paragraphing.

The task for the College in 2015 is to expand the pilot and to establish a whole-staff approach to writing. By tackling the problem using a direct approach through regular practice and feedback along with a more subtle approach through writing models (genre specific, six traits of writing), the College is endeavouring to lift the trajectory of growth for its students. We have learnt that targeted programs and the teachers who implement them need to be committed and multifaceted to accommodate the individual and collective needs within and across a cohort.

A Read on the Data: Rethinking the use of data to close the skills gaps of readers left behind

Mr Neil Lloyd, Deputy Principal, Brisbane Youth Education and Training Centre, Qld

Ms Andrea Hayes, Head of Department – Curriculum, Brisbane Youth Education and Training Centre, Qld

Abstract

Like many secondary schools, the Brisbane Youth Education and Training Centre has a high proportion of students with significant reading skills gaps. Through the systematic application of reading assessments the school has been able to ascertain that the mean reading age of students is 9.9 years for a cohort with a mean age of 15.5 years. For most teachers, though, knowing a student's reading age does not result in intuiting the next instructional step in a reading journey.

It became evident that additional data were required to inform teachers of the best 'jump-in' point for targeted intervention. The absence of useful data and a coherent approach was limiting student progression. Consequently, a school-wide program utilising the 'before, during and after' method of reading instruction employing rich texts and supported by targeted assessments was developed. The program prioritised explicit instruction and used action research methodologies to determine effectiveness.

The training provided to teachers on increasing fluency, oral language confidence and vocabulary, and selecting appropriate texts dramatically increased teachers' confidence in better engaging reluctant adolescent readers. Addressing the use and type of reading data collected and changing the instructional approach has seen a noticeable improvement in the mean reading age of students and an improvement in curriculum-based attainments such as a notable increase in the number of students achieving vocational education competencies.

One of the lessons to be learnt from the intervention is that having data isn't enough. Data must inform classroom practice and must be linked to known effective teaching strategies. Sharing relevant data with students and teachers is a powerful motivator and working with effective data can lead to changes in practice. Reading interventions must be supported in an ongoing manner with clear guidelines and ongoing feedback mechanisms in order to ensure the reading improvement journey is a smooth one.

Levers for Change: Leading professional practice for improved literacy performance



Mr Ivan Baker, Deputy Principal, Chifley College Shalvey Campus, NSW

Ms Cassandra O'Boyle, Head Teacher, Teaching and Learning, Chifley College Shalvey Campus, NSW

Abstract

A new senior leadership team at Chifley College Shalvey Campus identified a lack of student performance in literacy despite significant investment in teacher professional learning. Analysis of systems associated with teaching and learning exposed an absence of leadership supporting literacy at a faculty level. Factors contributing to this situation included low levels of expertise in data analysis and poor links between assessment and programming.

Whole-school professional learning in Team Leadership for School Improvement led by a consultant principal was undertaken. Professional learning led by a new Head Teacher employed through the Improving Literacy and Numeracy National Partnership helped to develop the capacity of staff to effectively integrate literacy into programming and assessment.

At the same time, data were collected at regular intervals throughout the year and was provided to teaching staff and members of the executive. Specialist teachers modelled appropriate practice to teachers and executive during this time. During a 12-month action research study, student performance improved.

Accountability systems were improved to incorporate elements of the NSW K–10 Literacy Continuum and the ACARA General Capabilities Continuums in all programs. Teachers applied the identified strategies of Super Six and the Project for Enhancing Effective Learning (PEEL) in response to student needs.

We have learnt that literacy expertise alone does not automatically cause improvement. Evaluation of changes in teacher and student performance over time, aligned with the implementation of key strategies, identified tipping points where significant student achievement occurred. Further analysis of these tipping points led to the identification of critical levers for success that have strong implications for improved professional practice. They are: accountability through a performance and development framework embeds literacy as core business for all staff; and professional learning in capabilities outside of key learning areas, such as literacy, relies on strong leadership from faculty managers to ensure sustainability.

Innovation: Collaboration for growth in student performance



Ms Lesley Gardner, Key Learning Area Coordinator – English, Xavier High School, Albury, NSW

Mr Gavin Dykes, Principal, Xavier High School, Albury, NSW

Mr Edmund Brown, Director of Faith and Mission, Xavier High School, Albury, NSW

Ms Nicole Morton, Assistant Principal, Xavier High School, Albury, NSW

Abstract

Xavier High School is a co-educational Catholic, systemic school located in the regional city of Albury. In 2013, this learning community (along with others in the Diocese of Wagga Wagga) was given the opportunity to work with Professor Helen Timperley and Dr Linda Bendikson (University of Auckland) to develop an inquiry into an identified problem of practice. Analysis of trend data from 2011 to 2013 from both the National Assessment Program – Literacy and Numeracy and the Higher School Certificate tabled writing as an area of concern across the school. Qualitative data collected through student, parent and teacher interviews further confirmed the selection of the target area.

The school initially focused on Year 7 writing skills (sentence structure, paragraphing and cohesion) in Religious Education, English and Human Society and Its Environment.

Teams of teachers aimed to work collaboratively within and across the three key learning areas. To commence the intervention, a writing task was set to gather baseline data and the students' work was marked against the school-developed rubric for each writing element. The task was externally marked by one marker. Teachers then focused on improving students' capacities within the three elements, collecting class performance data throughout Term 3. At the end of the term another common writing task was completed and once again externally marked against the set rubrics. Student growth across all three areas was significant.

This work will continue in 2015, however it will be a Stage 4 initiative (Year 7 and Year 8). The inquiry will be centred on focused professional learning around collaborative planning, teaming to teach, use of flexible learning spaces and use of formative assessment to map ongoing student learning.

Bridging Spoken and Written Narratives



Mr Matt Thomson, Foundation/Grade 1 Classroom Teacher, Charles La Trobe P-12 College, Macleod West, Vic.

Ms Emily White, Foundation/Grade 1 Classroom Teacher, Charles La Trobe P-12 College, Macleod West, Vic.

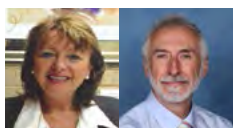
Dr Sofia Pardo, Senior Researcher, Department of Education and Training, Vic.

Abstract

Most students in the 2014 Foundation/Grade 1 class scored below average for their age on the Renfrew Action Picture Test, highlighting the need to develop their expressive vocabulary. To achieve this, students were telling the class then writing down a recount of what they had done over the weekend. Although records of the oral part of this activity were not kept, these were anecdotally described as considerably more detailed than the written counterpart. It was thought then that capturing students' ideas in an oral form may support and perhaps enhance their written production. Using iPads, students individually recorded their oral recounts as a way to brainstorm their ideas prior to moving on to writing them down on paper. It was hoped that students would assist themselves by going back and forth from their recording to support their writing.

A lexical density analysis was performed on both spoken and written recounts to determine the proportion of content words to the total number of words. The analysis showed that students' written production was not richer after doing the audio recording. Instead it showed that children's written production was lexically denser than their spoken productions despite the latter having a larger number of words. Although the anticipated result did not occur, other benefits were experienced by both teacher and students. For some students it highlighted the connection between spoken and written language, for others it gave them the opportunity to author something that did not require mastery of writing, while others found listening to themselves very informative as some of the self-ratings indicated. For the teacher, this activity offered the opportunity to capture the otherwise anecdotal evidence of students' developing oral language skills, and offered students a tangible source of personal feedback to improve upon.

Assessment Reform in Stage 5 and Record of School Achievement Assessment Judgements



Ms Karen Endicott, Principal, Sarah Redfern High School,
Minto, NSW

Mr Paul Gavin, National Partnerships Manager, Sarah
Redfern High School, Minto, NSW

Abstract

Data were showing that the students at Sarah Redfern High School were becoming less engaged in their learning, resulting in falling academic outcomes and an increase in unacceptable student behaviours. A middle school model was implemented to Years 7 and 8 in 2012 and evaluations showed a significant turn-around, resulting in increased student enrolments. The problem faced by the school was how to build upon this success as students progressed into Years 9 and 10: Do we simply revert to what had been done in the past or act on what the data were telling us we needed to do?

Through staff collaboration the school has implemented an innovative approach to the way the Stage 5 curriculum is delivered to students from Years 9 and 10. Students are now in classes together based upon evidence of their learning style, ability, outcomes and development rather than just their age. This has resulted in the implementation of a twenty-first century learning environment with a cyclic approach to the delivery of the Stage 5 Australian National Curriculum, a teaching and learning pedagogy implemented through 4MAT and the progressive achievement of students recorded on an ongoing basis through summative and formative assessment over two years.

An assessment and reporting team has been formed with the representation of every faculty in the school. Batteries of assessment tools have been created to ensure students are given the opportunity to demonstrate achievement of outcomes according to preferred learning styles. An innovative Gradebook has been created and is being successfully used across the school allowing for multiple entries and detailed cumulative recording of evidence towards the Record of School Achievement (RoSA) assessment requirements. Stringent processes to ensure internal and external validity of any assessment judgements have been put in place and provide a useful platform for supporting the professional learning of teaching staff.

Teacher Judgements in Maths: A functional data base



Ms Michaela Wright, Committee Member, Schools
Development Group, WA

Ms Sally Julian, Co-Chair and Treasurer of Schools
Development Group/Principal of Huntingdale Primary
School, WA

Abstract

Schools and colleagues raised concern that there was no systematic means to collect student data with the new Australian Curriculum. Members of the Schools' Development Group, a not-for-profit association, agreed in 2012 to take action to fill that gap. We partnered with the Department of Education of Western Australia, to put together a workshop team of curriculum officers, class teachers and school leaders to investigate the needs and develop solutions. With the findings of the group, we pressed on to develop the Maths Tracker Monitoring Tool from Kindergarten to Year 10. Schools and teachers can now track student progress in a consistent manner. Teachers of the same year level can share findings, see student needs and seek joint solutions. School leaders can get a whole-school view or selected filter views of progress.

Descriptors from the Australian Curriculum are broken down into Key Checkable Points, to assist teachers' planning and accuracy of monitoring via an Advanced Excel tool.

More than 100 public schools in Western Australia have subscribed to the Maths Tracker to assist their planning and gather student data to identify each student's progress and needs. Feedback from users indicates success in building moderated data pictures of individuals, targeted groups, classes and year levels of students.

We know that teacher judgements really matter. We know that having an agreed, consistent framework provides a valid means to gather, use and build up those valued teacher judgements, to support planning for further improvement. Thousands of children in WA government schools now have a building record of consistent judgements from entry at Kindergarten to Year 10 for the Australian Curriculum: Mathematics, due the Maths Tracker Monitoring Tool.

The English Tracker is now available too.

VALID: Validating school-based assessments using online, on-demand multimedia assessment tools for Years 6 to 10



Miss Joanne Sim, School Assessment Design and Development Coordinator, High Performance, Department of Education and Communities, NSW

Abstract

VALID (Validation of Assessment for Learning and Individual Development) is a new program being developed by the NSW Department of Education and Communities and is available to both government and non-government schools.

VALID is an extension of the current state-wide diagnostic science test for 14-year-olds, the Essential Secondary Science Assessment, known as ESSAonline. ESSAonline has been recognised nationally and internationally as the world's first online multimedia interactive whole-cohort test. The assessments that are being developed will also be online interactive multimedia tests for students in Years 6, 8 and 10.

Online multimedia assessment items are delivered with real-life contexts and problems, including practical investigations. The test assesses the science that students bring to these problems and how they apply the knowledge to solve problems. Data about students' science-related values and attitudes are also collected in the test.

All test items are mapped against an assessment framework which has been developed from both the Australian Curriculum and the 2012 NSW Syllabus. Schools, parents and students are provided with significant data and reports outlining the level of achievement demonstrated in the test. The distractor analysis provided to schools enables strengths and weaknesses in student understanding, especially misconceptions, to be identified and hence to inform future teaching and learning programs.

The success experienced to date has resulted in the expansion of the online diagnostic assessment program beyond Science. Developmental work has started for applications in English, Mathematics and History for both primary and secondary students.

Uber, Coffee and the Death of 'Mass': What the unschool community can teach educators about teaching, learning and assessment in a post-industrial context

Dr Rebecca English, Lecturer, Queensland University of Technology, Qld

Ms Tamara Kidd, Masters of Education student, The University of Newcastle, NSW

Abstract

This paper explores some of the issues around assessment and measurement in home education and alternative education settings. It reports on a review of literature into home education and alternative education schools such as Democratic schools, Big Picture Education Australia schools, Montessori schools, Ananda Marga schools and Reggio Emilio settings. It examines why these schools choose not to engage with mass, standardised testing instruments and, in most cases, choose not to participate in NAPLAN testing. The authors propose ways that more traditional, or mainstream, schools are able to employ many of the same tactics as these schools to collect rich, high quality data in a less intrusive, less prescriptive way that reflects the needs of the whole child as an individual.

We also propose that these alternative education settings are a place where teachers can gather a wealth of information about assessment, reporting, data collection and more democratic approaches to classroom management. The implications are many. They include, but are not limited to, alternative methods of data collection for schools, allowing students who are struggling or out of step to enjoy success, and for parents to see that the data collected for one student may not necessarily reflect the needs, skills and abilities of others.

How Strong is Your School as a Professional Community?



Dr Lawrence Ingvarson, Principal Research Fellow, ACER, Vic.

Mr Ed Roper, Deputy Headmaster of Staff and Community Relations, Brisbane Grammar School, Qld

Abstract

Research indicates that it is primarily by building a strong professional community that school leaders improve the quality of teaching and learning in their schools. This session describes a confidential online staff survey that school leaders can use to gain reliable data about the strength of their school's professional community and reports on the results from using the survey in one school. The ACER Professional Community Framework describes the five domains that characterise schools with strong professional culture, as defined by the Australian Performance and Development Framework, together with key elements, indicators and rubrics. The Professional Community Questionnaire provides a confidential online survey of all teaching staff in a school, based on the framework. Initial trials indicate that the questionnaire has high levels of internal reliability.

School leaders can use the framework and questionnaire to identify key areas for action and measure changes over time. Participating schools receive a comprehensive report based on the survey results. This session will report on the results of administering the Professional Community Questionnaire in one school.

Facilitating Teachers' Use of Performance-Based Assessments through the Formation of Professional Learning Communities Across Schools



Professor Derek Cheung, Chairman, Department of Curriculum and Instruction, The Chinese University of Hong Kong

Abstract

For students to be successful in the global age, they must develop higher-order thinking skills, planning skills, and performance skills to solve problems and create tangible products. However, research has repeatedly indicated that secondary school teachers generally find performance-based assessments very difficult to design, implement and assess.

This research project aimed to facilitate chemistry teachers' use of performance-based assessments when students plan and conduct inquiry-based laboratory work. Professional learning communities are useful to help teachers enhance their assessment literacy, but there are few chemistry teachers in each school to form an effective community. In this project, professional learning communities were formed across schools so that teachers can share missions, participate in collective action research, promote continuous development of assessment knowledge and skills, and conduct meta-evaluation. The participants were 16 chemistry teachers in 10 Hong Kong secondary schools.

Data were collected from classroom observations, interviews with teachers and students, artefacts, and assessment of students' performance skills. Teachers participated in regularly scheduled collaborative group meetings, designed inquiry-based laboratory experiments related to students' lives, developed assessment criteria for oral presentations, planned experimental procedures, wrote laboratory reports, and designed instruments to assess students' affective learning outcomes such as attitudes and self-efficacy.

The preliminary results of this project confirm that effective professional learning communities can be formed across schools. The assessment tasks and scoring rubrics are in English and can be easily used or adapted by teachers in other countries.

Getting Data to Teachers to Change Teaching Programs: A school's journey



Mr Matthew O'Brien, Head of Strategic Planning, Brisbane Boys' College, Qld

Mr Barry Dean, Head of Teaching and Learning, Brisbane Boys' College, Qld

Abstract

Schools have a large amount of data (internal and external academic results, external competition data, external NAPLAN data and others), yet getting this into the hands of teachers to inform changes to teaching programs and monitoring student performance and progress is not easy. Brisbane Boys' College was in this exact position eight years ago and decided that something had to be done. The College developed a Common Scale Grade Point Average (GPA) and at the same time invested in the development of a Data Profile Tool. This tool allows teachers to access any previous data (internal and external) on their students, aggregated into current class groupings, allowing for visual comparisons of individual students, classes and cohorts. The Common Scale GPA allows all internal data, regardless of year level, to be mapped on the same developmental scale, allowing for progress to be mapped over time.

The Data Profile Tool has resulted in better teacher understanding of their classes and students before they first meet them at the start of the year, and has empowered teachers to have conversations with students and their parents to better progress their students' education. At a cohort level, instruction can be differentiated between classes, and specific needs of a cohort can be identified and planned for. The Common Scale GPA has allowed for very specific tracking of student progress over time and a visual insight into an understanding that the standards and their associated grades get harder over time.

Much has been learnt during this project, and an important take-away is that the data are not the focus: the focus is improving the outcomes of the students. Once the data are visualised for users, it is the resulting conversations, questions and hypotheses that are the important drivers of change.

The Proof of the o-MLit is in the Testing



Dr Kellie Buckley-Walker, Project Officer, The University of Wollongong, NSW

Professor Jim Tognolini, Research Scientist, Pearson Assessment Centre, NSW

Professor Lori Lockyer, Head of Education, Macquarie University, NSW

Associate Professor Ian Brown, Dean of Education, The University of Wollongong, NSW

Abstract

The introduction of the Australian Curriculum has led states and territories to modify policies and curriculum to engage students who function in a technology-based society. Such an engagement requires students to develop complex literacy skills and knowledge, also referred to as 'multiliteracy'. However, there currently is no valid single measure to assess multiliteracy. This measure would support teachers in completing an image of student achievement in such an important area of learning.

The researchers, in consultation with an international research group and Australian-based practitioners, developed the conceptual model of multiliteracy on which the assessment is based. This conceptual model contains a range of lower (e.g. locating) to higher (e.g. communicating) order skills. The online multiliteracy assessment (o-MLit) was then constructed in consultation with teachers, researchers and digital designers. The pilot study involved 19 Stage 3 students, where screen capture/audio recordings were used. The validation study involved 290 students from 12 schools in NSW.

One aspect of the validation study involved investigating the logical hierarchy of the skills that comprised the construct. It was predicted that the eight skills assessing multiliteracy would increase in difficulty, with locating being the easiest through to communicating being the most difficult skill. The data collected from the analysis suggest that while the first five skills performed as expected in terms of their difficulty, the higher order skills did not function as anticipated. This result prompted a number of questions. Is the conceptual model sound? Are the items assessing the higher order skills actually tapping into the skills? Is the construct properly defined? These questions will be addressed during the presentation.

Assessing the higher order skills requires a clearer understanding of what students are doing when they exhibit these skills, which then needs to be translated into items and marking rubrics for the assessment of these skills.

Elaborating Responses to Fraction Assessment Tasks Reveals Students' Algebraic Thinking



Ms Cath Pearn, Senior Research Fellow, ACER and Lecturer, The University of Melbourne, Vic.

Abstract

Many researchers argue that a deep understanding of fractions is important for a successful transition to algebra. In this study, 67 Year 6 students from an eastern suburbs school in Melbourne completed a Fraction Screening Test designed to demonstrate clear links between algebraic thinking and students' solutions to fractional tasks. The Fraction Screening Test is divided into three parts. Part A includes routine fraction tasks such as equivalent fractions, ordering fractions and recognising simple representations. Part B includes five number line tasks. Part C requires students to use reverse thinking using less familiar fractions; that is, starting with part of the group to find the whole group.

Nineteen students (28%) gave correct responses and explanations to Part C questions. In many cases the students' solution strategies were not obvious. Seeking further information, we asked each student to elaborate their initial responses to one Part C task. In examining both their initial responses and their subsequent elaborations we were able to identify features that could indicate evidence of algebraic thinking.

The significance of these findings is that they highlighted three quite specific aspects of fractional operations that are not sufficiently emphasised in earlier research studies. The first is being able to operate on a given fraction in order to return it to a whole. The second is students' understanding of equivalence, meaning that the operations that are required to restore a fraction to a whole need to be applied to the corresponding numerical quantities represented by the fraction. The third is to show that several efficient and successful multiplicative methods can be used to achieve this goal, in contrast to other methods, usually additive, which may work only with simple fractions. Teachers need to be aware of all three aspects as they are essential for the subsequent solution of algebraic equations.

Tickling a Sleeping Dragon: How adjusting and aligning testing and curriculum can maximise success in Mathematics



Miss Sally Harris, Classroom Teacher and Mathematics Coordinator, Presbyterian Ladies' College, Burwood, Vic.

Abstract

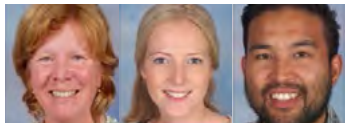
In Years 5 and 6 at Presbyterian Ladies' College, all of the Mathematics classes are streamed by ability to ensure that every student receives the appropriate level support and challenge to achieve their best. But how best to stream students into classes to maximise learning opportunities? How do we arrange the curriculum to ensure consistency across classes? And how do we track student progress?

Implementing a system of identical or 'common' tests at the end of each term has provided the opportunity to measure the success of students across a year level and to monitor progress by collecting data at regular intervals to complement formative assessments. Curriculum planning each term has been aligned to ensure every class at each year level is covering the same material at the same time, preparing students to sit the same test at the end of term.

The National Assessment Program – Literacy and Numeracy (NAPLAN) results of students are exemplary. Pupils experience success in the Maths Olympiad, Maths Challenge and International Competitions and Assessments for Schools in Maths. The numerical data collected through common testing, combined with observations and anecdotal notes, are used to paint comprehensive pictures of individual students over several years and informs future teaching and learning opportunities.

Aligning the Mathematics curriculum across the Junior School to allow for common testing has meant that we have been able to collect data about the progress of students as individuals, as well as part of a cohort. This information has been invaluable when considering class placement, catering for the needs of all students in a year level, supporting our conversations with parents and creating valuable mathematical learning opportunities for our students.

It's in My Hands: A student-based approach to assessment



Mrs Dena Reddan, Leader of Learning and Teaching, St Therese Primary School, Torquay, Vic.

Ms Stephanie Nitschke, Grade 5/6 Homeroom Teacher, St Therese Primary School, Torquay, Vic.

Mr Ronald Dando, Grade 5/6 Team Leader and Homeroom Teacher, St Therese Primary School, Torquay, Vic.

Abstract

This paper aims to explore the processes that one school has developed to ensure assessment is purposeful to the student, parent and teacher, and builds upon students' intrinsic motivation for improvement. The tracking of student improvement has been multimodal, including the use of data from consulting service Insight SRC, in order to follow student attitudes towards learning and their identification of themselves as learners. Teacher attitudes towards students' ability to learn have also been tracked. In 2010, the data for teachers' attitudes towards student motivation, student decision-making and learning and teaching hovered between 60–80% – they are now at 90–100%. The student data display the same trends around purposeful learning, stimulating learning, learning confidence and student motivation. From 2010 to 2014, learning and teaching in the school had progressed towards a more self-directed approach for students. This meant students taking responsibility for their learning, which improved student attitudes and motivation towards learning. This improvement in learning behaviours and overall engagement prompted further research into visible learning and student ownership to enable this practice to be extended to assessment and reporting of students. Due to the nature of the self-directed environment, anecdotal notes for students were recorded in Google Docs so that they were accessible to all staff in the learning community. A trial was conducted to allow students to self-correct formal assessments, which observed students having ownership over their results and using this information effectively to set future learning goals. The next phase of this system is to trial student access to this document online so that they too can make comments on their progress. In order for students to have more connection to the assessment and reporting process, teachers will require a belief that students will succeed. To be successful, this approach it requires a foundation of trust between all stakeholders.

From Hindsight to Foresight: Investigating data strategies to improve student learning



Mr Timothy O'Leary, Educational Data Analyst, Wesley College, Melbourne, Vic.

Abstract

With so much data available, a major issue facing educators is how we best use the information to maximise student learning. This research project focused on unpacking three questions related to the use of data, including:

- How can we effectively and efficiently identify students who are at risk of underperforming in a timely user-friendly manner?
- How can we measure and track student growth and progression throughout their journey through schools?
- What are the necessary elements to facilitate effective data-driven decision-making within education?

The outcomes of this research have been exciting, with a variety of metrics emerging to assist with tracking of student performance (and under-performance) and growth. Additionally, the requisite ingredients for effective data-driven decision-making in the school have been identified. While implementation of the outcomes of this research is ongoing, there are fundamental learnings that would be useful to practitioners in other schools. What will be shared during this session are: the outcomes of the research project, including examples of strategies for tracking achievement and progression; a model for effective data-driven decision-making for schools; and key insights from the implementation journey.

Using an Evidence-Informed Approach and Instructional Rounds to Lead Accelerated Whole-school Scale Change



Mrs Catherine Cox-Walliss, Principal, Mount Barker South Primary School, SA

Ms Cassie Young, Teacher, Mount Barker South Primary School, SA

Abstract

How do we use research-informed approaches to accelerate learning for children in poverty? In 2010 more than 50% of the school's children were in the bottom bands for National Assessment Program – Literacy and Numeracy (NAPLAN) and had huge levels of behavioural issues and disengagement. There were no data collection, monitoring or evaluation systems in place apart from records of behaviour. The school has made instructional, structural and cultural improvements at every level. We have developed and implemented whole-school pedagogical approaches named REAL time (Reading and Maths for Learning time) and a Reception to Year 7 three-wave intervention system. The school has documented critical commitments and standards-based referencing curriculum tools. All students have a documented One Plan based around their learning data, which they use to set and review their own and peer goals through self-assessment and evaluation. Staff work in instructional learning teams and are data-informed in their assessment for teaching. Staff undertake instructional rounds each term based on a problem of practice. They have extensive opportunities to lead and or participate in professional development, research, performance development, planning, programming and school improvement projects. The school has upgraded and changed the learning environments to accommodate platforms of educators and learners and implemented a rigorous inquiry-based Science program. There is a culture of collaboration, data-informed pedagogy and critical data analysis that informs classroom practice and staff, student and the Governing Council decision-making.

In 2014 we witnessed significantly improved NAPLAN results in all areas of Literacy and Numeracy, particularly in Years 3 and 5, where both cohorts achieved averages significantly above the national and South Australian figures. The development of Mount Barker South Primary School has not been easy. Of particular concern was the wellbeing of the children and the lack of hope that they displayed. Turning this around has required substantial focus and resilience culture development, and a relentless focus on using data to improve educational outcomes.

What Classroom Assessment Techniques Make the Difference? School beginnings with an end in mind



Ms Melanie Clark, Principal, Dardanup Primary School, WA

Abstract

Our questions at Dardanup Primary School (DPS) were: How do we involve students as partners in the assessment process? And how do we focus on proof of learning while decreasing the amount of evaluative feedback for schools and students, in order to drive pedagogy and improvement?

In education we often focus on evaluative feedback. When we only value product (tests, quizzes, culminating assignments), we can put ourselves at professional risk because the learning outcomes/standards also include process, and require students to articulate their learning to others. At DPS the data collected in the school were primarily post-learning data and evaluative feedback, often too late to be of benefit to the learner.

As part of an action research project, the school developed a method of gathering evidence from multiple sources over time. An examination of qualitative and quantitative data through triangulation ensured findings on improvement and areas requiring attention were reliable and valid. When teachers work not only to share the learning destination with their students, but to identify what quality evidence of learning looks like en route to the learning destination, then students have a much clearer picture of what they need to know, do and articulate. This presentation outlines the process DPS took to develop a community of learners involving staff, students and community who examine the journey, not the destination.

We show proof of learning at DPS through:

- artefacts of our learning at DPS
- explaining purpose, showing real and relevant samples in our students' learning
- development of a whole-school process involving collecting evidence, selecting and reflecting on evidence, and enabling the presentation of evidence in our school
- teaching each other to involve students in the assessment process
- measured improvements at class and whole-school level.

Being the Best Learner You Can Be: A mind, brain and education program in operation



Ms Donna Nitschke, Coordinator Neuroscience in the Classroom, Department for Education and Child Development, SA

Ms Vicky Muir, classroom teacher, Wandana P-7 School, Gilles Plains, SA

Abstract

An examination of school-based student data in the participating schools revealed that a significant number of students were presenting with deficits in the range of executive function skills that underpin any learning: attending, memory and self-regulation skills.

As a result of data analysis, four schools banded together to employ a coordinating teacher to examine ways that current cognitive neuroscience and psychological research could improve classroom practice and student outcomes by improving student executive function skills.

The Best Learner program has evolved over the last six years. Impacts have varied across each site but all have recorded positive changes and all have significantly altered approaches and practices within their sites. Some examples include: a reduction from 30 to 2 referrals to systemic behaviour support personnel in one highly disadvantaged site over the first year due to the social-emotional component of the program; changes to behaviour and learning policies/procedures; students reporting higher engagement and self-efficacy (measured via student surveys and parent/teacher reports); students requesting individualised programs to assist with attention, memory and self-regulation skills; and an overall reduction in students requiring additional learning support and intervention programs due to improved learning skills which had a positive impact on classroom behaviour and academic performance.

Understanding the interconnectedness of perception, attention, learning and behaviour has led to implementation of additional student-targeted programs that support the development of focused and sustained attention, interpersonal skills, coordination, problem solving, attachment, dealing with mistakes and failures constructively and a culture of continuous improvement.

Using Manipulatives and Guided Discovery Lessons to Assess and Improve Teaching and Learning Year 9 Mathematics: A lesson study

Ms Masjuwita Puteh, Education Officer, Rimba II Secondary School, Brunei

Hajah Siti Hasara Haji Matussin, Education Officer, Rimba II Secondary School, Brunei

Haji Hairol Azaman Haji Pungut, Education Officer, Rimba II Secondary School, Brunei

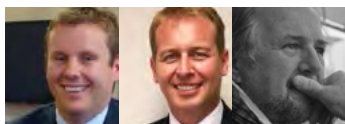
Haslinah Haji Zali, Education Officer, Rimba II Secondary School, Brunei

Abstract

The purpose of this paper is to make the case for the novel use of Lesson Study (LS) for assessment purposes, in addition to its typical use, which is to develop teaching and for professional development. The specific use of LS for assessment considered in this paper is for students experiencing learning difficulties in Mathematics topics. The example used is the assessment of learning about the area of a sector of a circle, and how to use this assessment to enhance understanding of students' needs. The focus of this paper is to report on a study that assesses students' knowledge and understanding on the topic before and after the intervention in their lessons (a guided discovery lesson using manipulatives) using the LS approach. The paper will analyse the kind of errors that students make in the topic and how manipulatives work to enhance students' understanding over rote learning (memorising formulae).

The department of Mathematics had set up a working committee for the intervention lessons, conducting pre- and post-tests as students' assessment, planning and modifying the lesson plans, and analysing students' results from both tests and the lessons. Analyses of data from performance of the pre- and post-intervention stages reveal that most of the students can understand the technique using manipulatives, hence generalising the formula for the area of sector. Improvement can be seen in the post-test results. The post-test results and the data analyses from teachers' questionnaires and interviews reveal the effectiveness of LS and manipulatives in enhancing collaboration and promoting professional awareness among teachers to improve the teaching quality and student understanding in Mathematics.

Empirical Evidence that Supports Changes to Pedagogical Practice and Tracks Learning Gains in Contemporary and Technology-enabled Learning Environments



Mr Terry Byers, Director of Innovation in Learning, Anglican Church Grammar School, Brisbane, Qld

Mr Andrew Wheaton, Deputy Headmaster (Academic), Anglican Church Grammar School, Brisbane, Qld

Dr Wes Imms, Senior Lecturer, Head of Visual Art Education and Research Higher Degree Coordinator – Curriculum and Teaching, Melbourne Graduate School of Education, The University of Melbourne, Vic.

Abstract

The Anglican Church Grammar School (Churchie) has directed significant attention to the design and creation of innovative learning spaces and the form and function of digital technology. These initiatives have had a considerable effect on, and in many instances have challenged, teachers' existing pedagogical practices. Initial review indicated that the inherent barriers associated with and results from such transformation ultimately contribute to the maintenance of the prevailing paradigm at the expense of the envisioned change.

Churchie embarked on a longitudinal research agenda to utilise data-informed practice to circumvent these barriers. The school partnered with the University of Melbourne in the New Generation Learning Spaces (NGLS) project. The project developed an evidence-base to support the redesign of technology-enabled learning spaces, matched with a quasi-experimental evaluation of the effect on teaching and learning. Results from quantitative analyses of multiple interventions indicated that particular configurations of the NGLS did have a measurable and positive effect on student engagement and learning experiences and outcomes.

The NGLS project resulted in the creation of data visualisation and learning analytics tools. These tools provide instant and visual multidimensional breakdowns to assist classroom teachers to better understand their practice and its effects on their students. These tools are also used for classroom observations, with their products as key artefacts in the annual staff appraisal process.

Using Assessment Data to Close the Gap between Student Achievement in Investigation Tasks and Tests and Examinations at the Australian Science and Mathematics School



Dr Bronte Nicholls, Director, Pedagogical Innovation, Australian Science and Mathematics School, Bedford Park, SA

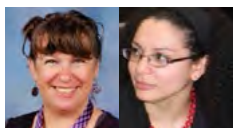
Ms Caroline Dean, Science Teacher, Australian Science and Mathematics School, Bedford Park, SA

Abstract

Assessment data provided to the Australian Science and Mathematics School (ASMS) by the South Australian Certificate of Education (SACE) Board show that there is a gap between Year 12 students' achievement in timed tests and investigation tasks. End-of-year exam performance is generally lower than test performance and significantly lower than achievement in the investigation tasks. The ASMS Developing the Self-directed Learner research tells us that the student cohort has consistently self-reported the lowest levels of agreement on the 20-question Self-Directed Learner's inventory with the statement: 'I'm good at doing tests'. However, the highest levels of agreement are with the statement, 'I look closely at comments on my work'. This, along with comments from students in focus group discussions, indicates that students are anxious about tests and exams and more comfortable with extended tasks where they can seek feedback on their work in progress.

Teaching teams have been provided with the raw data from the SACE Board, and encouraged to interrogate and brainstorm possible strategies to support students to improve their preparedness for and attitudes towards tests and exams. A range of digital tools to improve student learning, such as Google forms and Flubaroo, provide immediate feedback to students about their answers to practice questions. This enables students to take more control of their learning, and addresses the cognitive domain of learning. Most importantly, teams have implemented a program to address the effective domain for all students, in which teachers support students to 'attack the test' and develop a growth mindset. This has been shown to be essential to improve student learning outcomes. This presentation will explore a range of strategies that have been implemented, and the resulting shift in student achievement.

I've Got the Power in Auslan



Miss Heulwen Sweet, Auslan and Mathematics teacher,
Charles La Trobe P-12 College, Macleod West, Vic.

Dr Sofia Pardo, Senior Researcher, Department of
Education and Training, Vic.

Abstract

Results from the college Mental Math Exam completed by Year 8 students at the end of 2013 showed that this cohort of students performed significantly below what is expected for their year level. This exam focuses on numeracy concepts that should have been mastered in Year 7 according to curriculum stipulations. Students' low performance and explicit resistance towards maths called for a prompt intervention. These students chose the Auslan elective for 2014 and were introduced to the numeracy genre by their teacher as a way to provide them with an alternative non-English, kinaesthetic avenue through which they could grasp some of these fundamental numeracy concepts. Students and their teachers devoted eight class periods and students produced videos of themselves explaining these concepts using Auslan. Students were tested in Term 4 of 2014 on two foundational concepts: square roots and powers. Results from this test showed that most students have grasped these numeracy concepts after doing the numeracy genre as they produced on average 80% of correct answers. More importantly this understanding seems to extend beyond what was covered in class as shown in the responses given to the extension question included in the test. Students' self-reported level of confidence was also very promising. Students' views indicated that Auslan offered them another way to look and work with these numeracy concepts. The results from this pilot are very encouraging and suggest that students with difficulties in maths can really benefit from working on numeracy concepts via Auslan, as a model language that meets their visual and multidimensional needs. Our findings are further supported by a growing body of research.

Activating Student Voice: Accelerating improvement



Mrs Deb O'Neill, Principal, Gilles Street Primary School, Adelaide, SA

Ms Vicky Bitzios, TfEL Pilot Leader, Gilles Street Primary School, Adelaide, SA

Abstract

At Gilles Street Primary School we sought to identify a problem of practice by using student achievement data focusing on Mathematics where we interrogated students' results in the National Assessment Program – Literacy and Numeracy (NAPLAN) and PAT Maths, and the implications for teacher practice. State-wide and international research cites teacher quality as the greatest in-school determinant of student engagement and student achievement.

As a Teaching for Effective Learning (TfEL) Pilot Host School we activated student voice by using the SA TfEL Compass tool to gain student feedback. The TfEL Compass tool is an online professional learning tool for teachers to gain triangulated feedback and reflect on their teaching and learning practices. In the TfEL Compass survey, we designed a set of open-ended questions to elicit students' responses to their learning in Mathematics. The collated responses stimulated teachers' professional dialogue to identify pedagogical strengths and areas for improvement. We saw a need for developing students' language and understanding around teaching and learning.

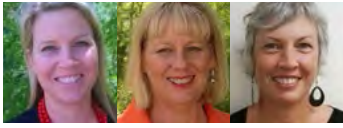
We have used the SA TfEL Compass as baseline perception data, and are including student feedback in classroom practice. We are promoting and documenting teachers' innovative practices as a professional learning community, highlighting student voice as the change agent. Analysis of PAT Maths data showed considerable growth in student achievement.

We have learnt that student feedback and teachers analysing and discussing practice are powerful levers for pedagogic shift in accelerating improvement in student learning. Leadership for learning is a significant driver for pedagogical improvement – leaders creating learning opportunities for teachers to make their work public.

We accept that students' learning progress is a collective responsibility and every student's learning is everyone's business. As leaders we provide time, structures and purpose in supporting teachers as they embrace the challenge of strengthening outcomes by engaging students as partners in learning.



Transforming Your Pedagogy through the Purposeful Use of Data



Mrs Tania Leach, Regional Project Officer – Curriculum and Pedagogy, Education Queensland, Darling Downs South West Region, Qld

Mrs Wendy Luscombe, Regional Project Officer, Education Queensland

Mrs Susan Evans, Regional Project Officer, Education Queensland

Abstract

Education Queensland Project Officers for the Darling Downs South West (DDSW) region were tasked with supporting schools to develop projects aimed at leveraging evidence-based practices. Many leaders were looking for ways to braid pedagogy, data and feedback practices to ensure every student succeeded.

In 2014, 21 school clusters identified the need to answer the following questions: How do we analyse summative data sets? How do we use data in short-term data cycles? How does data use improve pedagogy?

A subsequent teacher survey within pilot schools identified that 68% do not use data to select lesson content and 44% used data to group students but not to inform targeted planning.

The DDSW Purposeful Use of Data package was developed. This included developing a suite of workshops incorporating cultural change processes that moved collaborative data processes into the classroom and a suite of practical data analysis tools linking teaching and learning.

The action research projects initiated and examined how effective this package was in supporting teachers to use data to inform their pedagogy and improve student learning outcomes. Data measured teachers' understanding of how purposeful data use influences personal constructs of effective practice and improved student learning, using a variety of qualitative and quantitative measures including: surveys, video reflections, classroom observations, and pre- and post-student work samples and perception data.

Research findings showed: collaborative data-focused conversations and data literacies positively shifted 90% of surveyed teachers' perceptions and the quality of targeted teaching; 98% of student data improved; and the package assisted collaborative thinking processes, assisting teachers to unlock tacit knowledge to inform and improve student learning. Leaders used the process for reflecting upon school improvement agendas. Future considerations are that the use of the resources without intentionally building teacher capacity through active learning and reflection cycles is counterproductive to sustained change in practice.



Maximising Student Success in Senior Secondary Education



Ms Jan Raymond, Executive Manager, School Assessment Services, South Australian Certificate of Education Board

Ms Cathy Schultz, Manager, Moderation and Standards, South Australian Certificate of Education Board

Abstract

Every senior secondary jurisdiction collects data regarding student engagement, participation and completion. Some measures are monitored and reviewed regularly as indicators of success, such as: Years 10 to 12 retention rates, certificate completion rates, student achievement in literacy and numeracy and other key certificate requirements. This ongoing monitoring and review is also informed on an annual basis by a range of data sets that help jurisdictions identify areas of strength and potential growth in relation to student achievement.

Reviewing this data at a system level has resulted in the development of a framework to support school leaders to analyse the data for their school using four criteria. The framework is titled the Self Review Tool. The criteria for analysis are assessment practices, within-school quality assurance, communication and data management.

The tool has been available for schools to use on a voluntary basis for approximately a year and so feedback is largely anecdotal, however it is possible to track a number of schools and see change and improvement. The release of the tool has led to a broader improvement strategy being implemented in partnership with schools. This initiative has also led to schools making available models of good practice that are now available as support and exemplar materials for others. The workshop will involve a presentation of the Self Review Tool, a review of sample school trend data, and some support and exemplar materials.



Using Technology to Promote Formative Assessment in Secondary Mathematics: Advantages for teachers and learners



Mr Roger Wander, Lecturer and Clinical Specialist, MTeach (Secondary and Primary), Melbourne Graduate School of Education, The University of Melbourne, Vic.

Abstract

Technology use by Mathematics teachers and students over the past 25 years has had many benefits, but the transfer of student calculator screen information to written or verbal outputs has been cumbersome and ineffective in providing data on student understanding. Researchers have noted this to be among several barriers to their effective use of this technology in the classroom.

Recent developments in TI-Nspire Navigator technology now enable teachers and students to both generate and receive mathematical content, procedures, questions and responses electronically through handheld calculators. Such student-to-teacher interactions produce formative assessment data that can assist the teacher to measure the effectiveness of the lesson and make any necessary adjustments in situ. As stored data can be represented in a variety of forms – verbal/written, symbolic, graphical, tabular – a much more complete picture of the class members' mathematical knowledge and understanding can be gleaned, with students communicating now as fellow mathematicians.

Teachers in professional development workshops have noted that adapting to this technology can have several positive and challenging consequences. As students' handheld calculator screens can be projected en masse or individually, the teacher has the opportunity to gauge their level of task involvement and the extent to which they are exploring the particular mathematical concept. With a variety of QuickPoll templates, teachers can collect pertinent information for individual or whole-class reflection and discussion. 'Kylie, can you come up to the board to show us what you did?' is now replaced with 'Class, what questions would you like to ask Kylie about her results, methods or choice of representation?'

In this interactive workshop presentation, participants will be able to use the handheld technology and discuss the formative assessment opportunities for teachers. The level of content will not exceed junior secondary Mathematics, so all are encouraged to attend.

Initiating and Sustaining an Effective Whole-school Approach to Numeracy through Formative Assessment



Mr Rob Proffitt-White, Principal Education Advisor of Mathematics, Education Queensland

Mr Josh Morris, Senior Middle Head of Department – Student Performance Junior Secondary, Bundaberg State High School, Qld

Mr Colin Johnson, Head of Department – Mathematics, Bundaberg State High School, Qld

Mrs Karen McCord, Principal, Bundaberg State High School, Qld

Abstract

In 2013, Education Queensland's North Coast Regional Principal Education Advisor for numeracy conducted action research with a focus on improving student dispositions to Mathematics by identifying the associated teacher beliefs and the difficulties teachers were facing in delivering Mathematics. The initial relative gain in student data ensured continued funding in 2014 and the extension of the pilot to a wider Queensland audience in 2015.

Schools were invited to work with a regional expert over an initial six-month period. They were provided with funding for a 0.5 full-time equivalent numeracy coach and allocated 10 days for teacher training. Training included initial instructional rounds internalising school norms around effective delivery of resources, supplemented by a series of workshops that implicitly targeted teacher attitudes and beliefs through the creation of open-ended tasks and diagnostic tools. These tasks and tools were designed to:

- elicit evidence of learning across the proficiency strands
- embed short-term data cycles for Prep to Year 9 classes
- support professional learning communities to moderate student responses, and to create visible learning goals and success criteria.

Qualitative and quantitative data were collected at regular intervals. Findings highlighted that:

- students valued communication of strategies and reasoning within their classes
- teachers reported improvement in student engagement
- teachers' attitudes and beliefs in effective teaching of Mathematics improved in alignment with perceptions of feeling valued and supported
- student pre- and post-data demonstrated positive relative gain.

Obtaining Reliable Feedback from Your Students About Your Teaching



Mr Ed Roper, Deputy Headmaster, Staff and Community Relations, Brisbane Grammar School, Qld

Dr Lawrence Ingvarson, Principal Research Fellow at the Australian Council for Educational Research (ACER)

Abstract

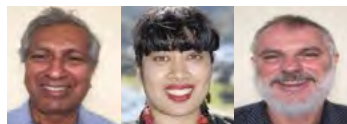
Research shows that feedback is important for professional learning. It also shows that Australian teachers rarely receive reliable feedback about their teaching from students. This paper describes the processes that have been used and refined at Brisbane Grammar School since the 1990s to obtain feedback from students.

Brisbane Grammar School has been using student feedback surveys with teachers since the late 1990s. Initially the surveys asked for student feedback from 30 items across four dimensions of teaching: relationship with the teacher, classroom environment, positive habits and reflective practices in the classroom. With the school's adoption of the Charlotte Danielson Framework for Teaching in 2010, this survey was redeveloped with the assistance of ACER into the current Student Perception Survey. The Student Perception Survey is comprised of 60 items that reflect components of the Framework for Teaching and of the Australian Institute for Teaching School Leadership professional standards for teachers.

Individual teachers have used the data to reflect on feedback from individual class perceptions of practice. The school has also formed teams to probe and understand patterns that have emerged in academic departments, year groups and school wide.

This session will present anonymised data from schools that have recently used the survey with their students. ACER can report the student perception data in a variety of forms, enabling comparisons, for example, between year levels or between subject departments.

Reconceptualising Entrepreneurial Learning and Assessment within General Capabilities in the Australian Curriculum: An innovative approach to learning and teaching for the future



Dr Shantha Liyanage, Research Coordinator, Department of Education and Communities, NSW

Ms Shanti Clements, Principal, Beauty Point Public School, Mosman, NSW

Dr Robert Stevens, Manager, Research, Policy Planning and Reporting, Department of Community Services, NSW

Abstract

Entrepreneurial learning involves developing knowledge, skills, attitudes and personal qualities appropriate to the age and development of the learner from primary school throughout life. It unlocks a new epistemological space for educators and students to examine socially and culturally situated learning. With growing demand for young people to become agile and prepare for changing employment situations, entrepreneurial learning fosters learners with personal qualities to further their education and develop life skills. Transformative learning occurs when students confront a new and challenging concept or way of thinking and then follow through to make a significant life change. With growing global interest in cultivating general capabilities among students, both learning and assessment of these capabilities are a critical consideration for educators. Entrepreneurial learning and its assessment is situated within the existing curricular structures drawing on the cross curriculum knowledge. This paper reviews entrepreneurial learning and its assessment using transformative learning approaches. The paper draws on recent experience in designing the Imagination First Project of Beauty Point Public School. Best practice models of learning are reviewed within the context of transformative learning practices and innovative assessment processes. The authors draw on their own experience to analyse how entrepreneurial learning can be developed and assessed and the best ways of instilling an entrepreneurial mindset and culture among young Australians. Our experience suggests different programs are needed to support entrepreneurial learning among different groups of students while having generic programs to instil entrepreneurial mindset. Whole-school approaches and targeted action can catalyse the cultivation of entrepreneurial mindset and a positive culture that can make a difference to individuals and groups of students for future careers while supporting professional development for teachers.

Pushing the Creative Boundaries in Student Assessment



Mrs Catherine Eppen-Van Der Aa, Head of Learning Area of Humanities, Mandurah Baptist College, WA

Abstract

Recent research has shown that over 98% of children below primary school age could be considered at the genius level. By the age of eight this has dropped to 60%, and by the end of their schooling career this has dropped to below 10%. This creative genius is 'bred' out of them through our nineteenth-century model of teaching, learning and assessment. Why is this so?

Teaching practice has undergone some change, but it is still firmly rooted in a nineteenth-century paradigm. Dr Yong Zhao likens it to a sausage factory. Schools are producing students who all think the same. Some economists predict that the next lucrative industries will have to come from creative thinkers; that our country, and indeed most western nations, will face challenges if we do not grow our intellectual capital. In Australia we are especially vulnerable, due to our heavy reliance on the exporting of raw materials and the growing worldwide issue of climate change. The bottom line is that, for the future success of our nation, we need our children to keep their creative genius, foster it, nurture it, let it grow and thrive. We need to specialise, become more sophisticated and offer the world creative solutions to problems. Ideas are the currency of the future. Yet our education 'system' is essentially forcing the very creative genius out of our children and this must change. We need to teach our children that it is okay to think outside the square and use innovation. As teachers, we need to find better ways to assess creativity. This can be a difficult task but it can be done with great success.



The Progressive Capacity Matrices



Mr Anton Reiter, Educational Consultant, Effective Curriculum Ideas, Vic.

Abstract

Sometimes:

- students present with Mathematics knowledge and skills that are not reflective of those listed on their previous reports
- new students arrive into the classroom without available and actionable data
- students find any testing of their skills (to determine a baseline) to be a traumatic experience.

To address these issues, I created a way to both assess and then extend student knowledge that didn't look or feel like a traditional test. I combined the format of Quality Learning Australia's Capacity Matrices with the content contained within my Progressive Curriculum Frameworks to create the Progressive Capacity Matrices.

Using the Progressive Capacity Matrices enables the collection of baseline data without students feeling like they have to complete a test. It allows for the development of evidence-based work for justifiable assessments that provides the next teacher or school with accurate, actionable data.

When combining this approach with the activities that I have designed and sourced for every content descriptor, elaboration and standard for the AusVELS and Australian Curriculum Mathematics curricula, students, at a click of a button, can access differentiated and personalised learning experiences, in the mode of a flipped and/or blended classroom.

Anyone can use the Progressive Capacity Matrices, starting from no baseline or continuing on from another teacher's or class's work for the following year. They are a prime example of evidence-based teaching, and their use leads to legal compliance with student record keeping and becomes irrefutable proof for report marking. They can also be used in parent-teacher interviews, student-led conferences or ad-hoc meetings, with no notice needing to be given to teachers.

Attendees of this workshop will be able to view and read documented student work samples that incorporate the Progressive Capacity Matrices and gain hands-on experience to enable them to: create Progressive Capacity Matrices for any area of Mathematics, linked to electronic resources; and to create Progressive Capacity Matrices for any subject or learning area, linked to the Australian Curriculum and/or AusVELS.



Everything is Formative! Creating a culture of peer and self-assessment in Workplace Maths



Mr Mark Sivills, Maths Teacher, Don College, Devonport, TAS

Abstract

Workplace Maths is nominally for students on vocational programs, but in reality it is for students who have 'failed' Maths at high school. Many students are disenchanted and teachers can find it difficult to motivate and engage them. In 2012 the pass rate was 65%, with 20% not completing the course. We felt we could do and needed to do more to raise outcomes.

In 2013 we developed a system of formative assessment for our university pathway courses (General Maths and Maths Methods) which proved popular with staff and students. It consisted of a cycle of double-deadlines, scaffolded peer- and self-assessment, comment-only marking and using tests formatively. We decided to trial it in Workplace Maths too. We weren't sure if it would work. We were delighted to find that it did!

The students demonstrated they were just as capable of providing constructive peer feedback as the academic students. They enjoyed their roles as mentors and their test results were impressive. The control group achieved an almost identical average result as the previous unit (+0.05 grades). The group exposed to only parts of the program achieved +0.3 grades. The group that undertook the full cycle of the system improved by +0.5 grades. The effect sizes across two units were 0.06, 0.38 and 0.73 respectively.

In 2014 our pass rate increased to 81%, our highest in five years, and we are aiming even higher this year. In 2015 all Workplace Maths units have been designed around this cycle, which we call 'Everything is Formative', and which we hope will result in greater outcomes for our students. The lesson we have taken from this is that all students, regardless of perceived ability or motivation, are capable of high-order tasks such as self- and peer-assessment and taking responsibility for their own learning. Furthermore, we have clear evidence that engaging with these tasks raises their outcomes.

Teaching with Maths GeoGebra versus Traditional Methods

Dr Pellumb Klllogjeri, Mathematics Lecturer, University of Elbasan, Albania

Mr Adrian Klllogjeri, Masters of Science student, Kingston University, UK

Abstract

Study and the analysis of the effect of using GeoGebra software in the teaching and learning process of Mathematics show statistical indicators and inferences that support the advantage thesis related to it. We have investigated and reached some conclusions that the Mathematical course taught by using GeoGebra software is as effective as more traditional methods of instruction. The results and the inferences are based on an experiment carried out in Albania, over a period of two years, in the second and the third year of several secondary schools of different cities. The experiment compared several groups, one of which served as a control group. In the first round of the experiment, one group was taught a chapter on derivatives by a GeoGebra specialist using GeoGebra software, while the control group was taught by the same teacher using traditional teaching methods. The second round of the experiment compared three groups from different backgrounds.

The experiment showed that: the Mathematical course taught by using GeoGebra software is as effective as more traditional methods of instruction; there are advantages of GeoGebra software for the community of teachers and specialists of Mathematics; and the benefits of using GeoGebra software relate to independent and creative work, curiosity, driving force, research opportunities, different science interactions, easy and better understanding of concepts, time benefit, and a wider and continually growing community of users. The experiment confirmed that the training of the Maths teachers with GeoGebra is very important for the implementation of the process. This was particularly apparent in the second round of the experiment in the groups in which GeoGebra was introduced for the first time and where there was no previous experience with GeoGebra.

Using the Quality Teaching Model as a Pedagogical Framework to Improve Assessment



Mr Peter Clayden, Deputy Principal, Canberra College, ACT

Abstract

Executive staff and teachers identified the need to improve the quality of set assessment tasks. School assessment coordinators confirmed this by locating low differentiation in unit and item scores across diverse curriculum areas. Staff training occurred on how to review assessment tasks using professional conversations guided by the publication *An Assessment Practice Guide: Quality teaching in ACT schools*. Individual coding and recoding of tasks, professional conversations and task refinements were undertaken in an attempt to improve task quality, and score differentiation and student outcomes. Staff surveys and unit spreadsheet analysis occurred as evaluation processes.

Staff surveys demonstrated that 95% of teachers felt they had improved the quality of set tasks. Assessment officers observed a broad improvement in differentiation in marking spreadsheets across the school and 85% of staff chose to continue to participate in the coding and professional discussion processes using the Quality Teaching model. Data from over 100 individual assessment task reviews demonstrated increased coding. In 2014, one student gained the highest possible Australian Tertiary Admission Rank of 99.95. Teachers acknowledged that reflecting on the quality of assessment tasks supported this. There are increasing national and jurisdictional expectations that hold teachers to account for the professional conversations they have about their teaching and learning practice and how they know this is improving student learning. I can demonstrate how to utilise the Quality Teaching model to increase the confidence of staff in setting quality assessment tasks through guided professional conversations. addresses the Australian Professional Standards for Teachers: standard 5.1, to 'assess student learning'. This approach also gives school leaders surety that their staff are focusing on improving student learning through their pedagogy by promoting high levels of intellectual quality, establishing a high quality learning environment and generating significance for students.

Working Together to Enhance Teacher Education: A collaborative project between Queensland College of Teachers and Queensland Deans of Education



Ms Deanne Commins, Executive Manager – Professional Standards, Queensland College of Teachers

Ms Paula McMahon, Manager – Accreditation and Professional Standards, Queensland College of Teachers

Professor Helen Huntly, Chair, Queensland Deans of Education Forum

Abstract

As part of its legislative responsibility to accredit and monitor the initial teacher education programs of higher education institutions (HEIs) operating in Queensland, the Queensland College of Teachers (QCT) has longstanding processes to approve and continue to oversee these programs. In 2013, in collaboration with Queensland Deans of Education, the QCT negotiated and trialed an additional 'monitoring' approach, designed to further enhance the established relationship with deans while supporting initial teacher education providers in their goal of continuous, informed and evidence-based improvement of their programs.

The trial commenced with analysis of survey data and stakeholder consultation to identify a focus area. It was decided that the important area of 'interpreting student data' (Australian Professional Standards for Teachers: standard 5.4) would form the basis of the initial monitoring pilot that comprised a series of activities including a literature review to identify best practice; a stakeholder forum where teacher employer representatives shared their expertise and opinions with higher education institution representatives; a workshop for institutions, in which current practice in relation to standard 5.4 was discussed and assessment samples compared; and the convening of an expert panel that considered the submissions from institutions.

The initiative has resulted in valuable learnings for all stakeholders involved, including the QCT. Subsequently, the QCT will continue to support higher education institutions to enhance programs in this area throughout 2015.

Kaleidoscope Landscape: Reframing our approach to teacher growth and development

Dr Liz Criddle, Director of Teaching and Learning, St Stephen's School, Greenwood, WA

Abstract

A kaleidoscope might well represent the fragmented approach to teacher growth and development that currently exists across the education sector. Research data recognise that quality teaching is key to positive student learning outcomes, and show the need for teachers to be well prepared for the classroom. The research data question the effective integration of teacher training theory with professional experience, and reflect that teachers require immersion in the application of theories of teaching to classroom situations.

In this school, qualitative data, including observational evidence and interviews with new graduates, further evidenced this concern. We have endeavoured to enhance our culture of teacher talent development at the school level, focusing on improving teaching practice, with its consequential effect of improving student learning. The school is developing targeted learning opportunities for graduates, within a culture of reciprocal collegial relationships.

Given the teaching profession's charter within our community, we are in the process of developing and implementing a response that defines teacher education as the development of important skills and characteristics beyond the years of studying at a tertiary institution. The action taken at the school includes an integrated approach to a graduate program, mentorships, structured classroom observation and action research teams. These are targeted at teacher growth in the key strategy of improving teaching and learning. Data collected to show how these changes are making a difference have included mentor observations, focus group interviews, graduate surveys and teacher feedback.

Without a focused and unified approach to the kaleidoscope of approaches to growing our teachers, the teaching profession will fragment into many pieces. To retain inspired and passionate teaching professionals who are alive in their profession, important skills and characteristics must be developed beyond the years studying at a tertiary institution. We then can move to meeting the requirements of Domain Five – An Expert Teaching Team (National School Improvement Tool).

Learning from Those Around Us: Learning Walks and Watching Others Work



Miss Judith King, Coordinator Regional Services, Department of Education, WA

Mr Mark Hendon, Deputy Principal, Cannington Community College, WA

Abstract

Throughout our school we were noticing low expectations for students: they were not being pushed and driven, and our school-wide data were showing a lack of consistency in formal reporting, on-entry, NAPLAN, and teacher observations. Our teachers were displaying a lack of knowledge and understanding. Research shows the best professional learning is that done closest to the classroom. So we started Learning Walks and Watching Others Work (WOW) across the school. Teachers walk through other classrooms looking at the environmental print, displays, reward systems and the level of the students' work being displayed. Teachers were given a 'look for' sheet to assist with note taking and reminders about what to look for. This increased accountability, professional discussions and moderation across the school.

We then decided to work across the network starting with five schools. If something sparked a teacher's interest during a group walk through they asked to go back individually using the WOW process. Our first group visit to another school always finished with a meeting at a café to discuss what had been seen and learnt, including personal reflections, as well as reflections and feedback for the schools visited. There were a number of staff going to other schools looking at specific strategies (lessons for example) that they felt they needed to improve on in their own teaching. We were now regularly sharing knowledge and networking across the schools.

By completing Learning Walks and WOW sessions across the network there were increased academic expectations and outcomes for all children and excellent professional learning opportunities were provided for all teachers. Learning from those around us expanded the knowledge of the teachers, provided a network of colleagues and helped break down the barriers of a closed classroom door. Participating helped instil a belief in the teachers that all children have the capacity to learn and disadvantage does not define one's destiny and cannot be used as an excuse for poor results.

Low Socio-economic Status meets High Expectations: A research-led approach to successful student research

Ms Ingrid Lees, Coordinator, Parafield Gardens High School, SA

Abstract

A compulsory element of the South Australian Certificate of Education (SACE) is the Year 12 Research Project. This is an independent and often self-directed research project that students must complete with a passing grade in order to graduate with their SACE. At our low-socio-economic status school, initial student results for the Research Project and ongoing conversations in 2011 indicated a predominant 'just pass it' attitude among many of our students.

A change of subject leadership together with the ongoing implementation of research-based practices that addressed student mindset, the collaborative use of feedback, high expectations, and explicit literacy strategies have cumulatively resulted in significantly improved student outcomes at our school. Additional teacher collaboration has occurred with staff from other schools including both formal and informal professional development opportunities, and more recently an online forum being created via Facebook that extends teacher professional conversations and the sharing of ideas across the state.

An indication of excellent achievement in the SACE is the awarding of a subject Merit to a student. These go to the top 2% of students who have also achieved an A+ grade for each subject. Since 2011 (where our results peaked with a small number of A- grades) we have since had eleven Merits awarded to Research Project students from our school, five of them in 2014. These student results have been achieved through deliberate changes to our teaching practice, which have been informed by the work of Dylan Wiliam, John Hattie and others, and also the ongoing professional development of our staff.

We have learnt that such success isn't accidental, and instead would encourage other interested schools to invest time and thought to a similar slow-burn approach to school improvement.

Instructional Practices Inventories: Quantifying and improving students' cognitive engagement – case studies from three Sydney high schools



Ms Sabreena Taylor, Consultant, Teacher Training Australia, NSW

Abstract

External data, National Assessment Program – Literacy and Numeracy (NAPLAN) outcomes, School Certificate and Higher School Certificate results showed low levels of student achievement and value added over several years in three Sydney high schools. Staff reported low levels of student engagement and student surveys revealed students found lessons uninspiring with little challenge. Senior executives suspected some staff were relying on low level, repetitious tasks but lacked evidence. I was invited by the principal of each school to consult on plans of action.

Several meetings were held (senior executive, executive and staff) to explain the process of research-based Instructional Practices Inventories (IPIs): staff familiarisation and training, data collection, collaborative analysis of data and planning of professional learning, and subsequent data collection and analysis. We collected data as school-based teams, ranking lessons on a six-level scale of student cognitive engagement. Pie graphs comparing percentages for each level to average schools and effective schools were presented to staff. Staff collaboratively planned how to limit low level and increase high level engagement. Subsequent IPIs, data collections, external and internal tests results, staff reports, higher level staff discussions of practice, and increased enrolments, showed the effectiveness of IPIs.

The IPIs revealed a lack of knowledge of practice that utilises higher order thinking and student substantive conversations about learning. Inventories also showed that teachers undervalue explicit teaching. Common misconceptions included 'Mathematics is not creative' and conversely 'Art, Textiles and Wood Technics are always creative'. It is very easy for schools to decrease non-engagement, which leads to immediate improvement and feelings of success. It is a longer process to increase higher order thinking in lessons but is possible when teachers collaborate and are consistent in practice.

Sleep for Wellbeing and Academic Performance



Mr Toby McIlrath, Education Consultant and Medical Researcher, Rhinomed, and Camberwell South Primary School, Vic.

Abstract

Poor sleep and poor sleep habits (sleep hygiene) are under-recognised individual and community health problems. Poor sleep quality, sleep disturbance and shorter sleep duration have been linked to academic performance in schools, as well as mood and coping skills in students, particularly in teenagers.

Recommended intervention strategies include raising awareness, and the development of well tolerated and accepted technology that can be tethered to sound tailored education programs.

Recently, a number of schools have been implementing sleep education programs for students, teachers and parents to drive a 'sleeping fit' community. These education programs are designed to improve community understanding of sleep and sleep hygiene with a focus on improving mood, attention and performance in schools.

This presentation provides data associated with sleep and academic performance in schools and highlights the need to create a 'sleep fitness' movement within educational communities. The presentation also introduces a model for driving the movement within educational communities and linking in other wellbeing initiatives. Data associated with staggered class starting times will also be discussed.

Flipping the Textbook



Mr Matthew Cunnane, History Teacher, Noosa Pengari Steiner School, Doonan, Qld

Abstract

Having taught the same students for years, I could predict their result on a unit of work. I wanted to create a program that increased their motivation to learn and time on tasks, and provided better results without dropping the quality of learning. I also needed to cover the breadth of the curriculum while providing in-depth learning experiences.

I devised a program that flipped the textbook. The students became the authors. Each student was assigned a topic within the area being studied and wrote a chapter on it. They had to use current validated information, write in a style suitable for their peers, and include pull-outs, original images, and comprehension-based review questions. Classmates acted as sub-editors for each other allowing me to focus on the big concepts. The final assessment was random questions from each chapter.

Students were engaged in peer-to-peer collaboration. They needed to have read and understood all the chapters, which encouraged them to ask clarifying questions of terms, and concepts. They identified grammar and spelling issues as well, and were able to share resources and information to help deepen their own subject. This allowed me to focus on one-on-one work with students on their higher order skills. The final results showed improvements for all students within the cohort.

The program was so successful that I ran it again with a second cohort of students, using a different topic, with similar success. I intend to run it for a third time this year. I have also used the texts created with students in lower grades as a supplement to our usual resources. These students have shown a greater interest in reading text from their peers and have expressed a desire to contribute to the growing body of work when they reach Year 10.

Using Data for Effective School Improvement



Mr Robert Marshall, Senior Project Director, School Improvement, ACER

Abstract

‘How can I make better use of data to help my students?’

This question will be the stimulus for this session. The session will focus on Domain 2: Analysis and discussion of data, from the *National School Improvement Tool*.

Effective use of data is increasingly seen by schools as a critical aspect of school performance. This session will provide an overview of Domain 2 and consider which behaviours by teachers are essential for sustained school improvement. Case studies of some schools’ effective use of data will be provided.

Bringing Data to Life



Ms Brenda Little, Head of Teaching and Learning, Beenleigh State High School, Qld

Abstract

Two years ago, data at Beenleigh State High School existed in abundance, but hovered in an ethereal digital unknown. There was minimal use of data sharing and analysis to inform teaching practice and to differentiate learning. As a result, the rate of student improvement was unsatisfactory.

Mid 2014, a trial was undertaken in a Year 8 Literacy class, drawing on a range of short- and medium-term data. This trial included moving from paper-based to web-based PAT Reading assessment, which allowed for immediate, comprehensive feedback, which in turn informed streaming and in-class grouping. Learning experiences could then be tailored to address skills gaps within particular scale-score ranges.

A selection of rigorous pre- and post-testing was introduced to measure short-term growth. This was facilitated by the use of ACER Q Central, an online learning environment that allows automated marking and graphic visualisation of data for quick and effective analysis. The introduction of regular individual ‘reading conferencing’ to measure fluency and engagement with text provided an additional formative assessment tool.

Within a period of eight weeks, pre- and post-testing indicated 7% improvement in student achievement. The same approach was applied to the whole Year 8 cohort with similar results. Previously, challenging student behaviour had made a constant negative impact on teaching and learning. Upon introduction of the new program, there were no further behaviour referrals, signifying a complete turnaround in engagement. Students also demonstrated an increased accountability for their learning due to timely monitoring of progress within a supportive environment.

This approach to the teaching of literacy has now been adopted by the whole junior secondary cohort and would be easily transferable to other school settings and curriculum areas. Making data ‘visual’ and ‘visible’ to students, staff and community has been paramount to our success. Our use of data has breathed new life into our practice.



PRESENTER BIOGRAPHIES

Ms Aurora Alonzo

Woodbury Autism Education and Research, NSW

Aurora Alonzo is a Board Certified Assistant Behaviour Analyst (BCaBA) and is currently practising as a Clinical Supervisor at Woodbury Autism Education and Research located in Baulkham Hills. She received her Bachelor of Science in Applied Behaviour Analysis (ABA) from the University of North Texas in 2007. Aurora spent four years as a Behaviour Therapist for students aged 3–12 in Dallas, Texas before relocating to Australia in 2011. Aurora's passion lies in the effective implementation of teaching strategies to improve socially significant behaviours.

Mr Ivan Baker

Chifley College Shalvey Campus, NSW

Since 2000 Ivan Baker has been involved in executive positions within and outside schools supporting students in Low SES communities. He has held the position of Head Teacher Welfare, Regional Equity Coordinator, Regional Facilitator for the National Partnership on Literacy and numeracy and most recently Deputy Principal at Chifley College Shalvey Campus. A key element of all of these positions has been the leadership of programs aimed at improving literacy levels of students. Ivan has developed insights into the conditions required to establish sustained improvements in literacy teaching and learning in both primary and secondary schools.

Ms Vicky Bitzios

Gilles Street Primary School, Adelaide, SA

As a passionate educator, Vicky Bitzios has worked in a range of Department for Education and Child Development (DECD) schools as a Classroom Teacher in primary and secondary schools and in leadership roles. Vicky's commitment to supporting others in professional learning has been demonstrated through her involvement in a range of state-wide projects and initiatives. She joined the Pedagogy and Leadership Portfolio in 2010 and spent three years as a Teaching for Effective Learning (TfEL) Specialist Teacher and was a Research Officer for the TfEL Pedagogy Research Project in 2013.

All of these roles and experiences have contributed to her deep understanding of pedagogy allowing her to challenge thinking and transform practices.

Ms Julia Blakey

St Mark's Primary School, Dingley, Vic.

Julia Blakey began her teaching career in England in 1994. After emigrating to Australia 1996, she worked as a primary school teacher in the catholic system in Sydney for seven years. She moved to Melbourne in 2003, where she taught adult literacy at TAFE. In 2008, she became Literacy Leader at St John's Primary School, Footscray, a position she held until 2010. In 2011, she was appointed Literacy Leader at St Mark's Primary in Dingley and she continues to work there. Julia completed a Masters this year, and hopes to embark on a PhD, researching how effective feedback can improve outcomes in the upper quartile of students in critical reading.

Mr Tim Bordado

Sarah Redfern High School, Minto, NSW

Tim Bordado is Head Teacher Stage 5 at Sarah Redfern High School and has managed a cross curricular team of Head Teachers in the planning and development of an innovative teaching, learning and assessment model for Stage 5. He is currently overseeing the second year of implementation of this model and concurrently carrying out an ongoing evaluative process of the systems and processes adopted towards the model. Within his professional practice Tim Bordado has developed and successfully implemented a range of strategies for substantive school improvement by developing the ability of school personnel to function as a professional learning community.

Professor Marie Brennan

Victoria University, Vic.

Professor Marie Brennan is currently Professor of Education in the College of Education at Victoria University, Melbourne. She started her education career as a technical teacher of humanities in the 1970s, and has worked in many positions since then, including as a member of the Access Skills Project Team in the Curriculum and Research Branch, co-coordinating the Victorian School Improvement Plan, and as a policy analyst in the ministry-wide Policy Coordination Division. Her university positions include stints at Deakin University, Central Queensland University, the University of Canberra and the University of South Australia. Now back in Melbourne, Professor Brennan is active in research that involves teachers, students and community members, including in Australian Research Council projects in Queensland and South Australia regional areas, as well as in Melbourne's west.



Mr Edmund Brown

Xavier High School, Albury, NSW

Ed Brown is currently the Director of Faith and Mission at Xavier High School, a position he has held since 2004. Ed was a founding member of the @Xavier project team and has been a passionate advocate for its role in Religious Education at Xavier. This acknowledges the significance of writing in junior Religious Education classes as the building blocks for the Higher School Certificate. A former primary school Principal, Ed has a long standing belief in the effectiveness of staff working together in teams, planning, teaching and assessing together as a learning community. Ed believes that as leaders we must be at the front line and must lead through example. He has demonstrated this commitment by leading and teaching as part of the @Xavier project since its inception.

Associate Professor Ian Brown

The University of Wollongong, NSW

Associate Professor Ian Brown is the Dean of the Faculty of Education at the University of Wollongong.

Dr Kellie Buckley-Walker

The University of Wollongong, NSW

Dr Kellie Buckley-Walker is a Project Officer researching Multiliteracy Testing in a Multimodal Environment. This current research focuses on developing an online assessment for Stage 3 students which evaluates lower and higher order skills within the multiliteracy domain. In developing the online assessment Kellie has collaborated with teachers and students who provided feedback throughout the process. Her general research interests include tailored online assessment; and assessment design and attitudes of students, parents and teachers towards assessment. Prior to completing her PhD Kellie was a high school Science teacher for 14 years in South Australia.

Mr Terry Byers

Anglican Church Grammar School, Brisbane, Qld

Terry Byers (MLI and BEd) is currently the Director of Innovation in Learning at the Anglican Church Grammar School (Churchie) in Brisbane, Queensland. This role is focused on the effective integration of technology to best increase student's engagement and academic outcomes. At this same time, he is uncovering ground breaking insights into the critical role that the classroom environment plays in this equation. Together these developments have led to the creation of dynamic and responsive tools that provide teachers with data-rich visualisations. These visualisations enable teachers to better understand their pedagogical practice in technology-enabled contemporary

learning environments and how this affects student learning outcomes and gains. Terry is currently one of the three University of Melbourne PhD researchers in the 2013–2016 Australian Research Council project Evaluating 21st Century Learning Environments. Recently, Terry has been awarded the prestigious Australian Postgraduate Award and the 2014 Australian Microsoft Expert Educator.

Mr Frank Cananzi

St Paul's Primary School, Coburg, Vic.

Frank Cananzi has been ICT/Curriculum Development Leader at St Paul's for the past 14 years. In collaboration with Paul Sheedy, he has worked to bring about: evidence-based teaching where assessment drives individual learning; use of technology in all elements of learning and teaching: assessment, planning, implementation and reporting; and use of technology so that teachers work smarter not harder to improve outcomes and reduce teachers' workload.

Professor Derek Cheung

The Chinese University of Hong Kong

Derek Cheung was born in Hong Kong. After 12 years of teaching chemistry in a secondary school in Hong Kong, he moved to Australia and obtained his PhD from the University of Western Australia in 1996. He is a Professor and the Chairman in the Department of Curriculum and Instruction, The Chinese University of Hong Kong. Professor Cheung is the author of over 30 articles published in international refereed journals such as Research in Science Education and Journal of Chemical Education. His research interests include curriculum development, science education, and classroom assessment.

Ms Melanie Clark

Dardanup Primary School, WA

Melanie Clark is the Principal of Dardanup Primary School, WA.

Mr Peter Clayden

Canberra College, ACT

Peter Clayden has worked extensively within the ACT Education and Training Directorate system for the utilisation of the Quality Teaching model to support teachers to reflect on practice. He has undertaken this work primarily within a senior college context. He was responsible for facilitating the 2012 Quality Teaching rounds research partnership between ACTETD and the University of Newcastle. He teaches Environmental Systems and Societies as part of the International Baccalaureate diploma offered at Canberra College and looks for ways to support all teachers in their professional conversations focusing on capacity building aligned to the Australian Professional Standards for Teachers.



Ms Shanti Clements

Beauty Point Public School, Mosman, NSW

Shanti Clements is Principal at Beauty Point Public School and was the former Assistant Director, Leadership and Teacher Quality, with the High Performance unit. In her role, she has supported the development of new school planning processes for NSW Public Schools, co-designed the Dynamic Learning System model and introduced the new Leadership Pathways strategy for state-implementation. She is currently in her fourth year of study for her PhD.

Ms Deanne Commins

Queensland College of Teachers

Deanne Commins is the Executive Manager (Professional Standards) at the Queensland College of Teachers where she leads the accreditation of initial teacher education programs in Queensland, the implementation of the Australian Professional Standards for Teachers and is involved in national and state initiatives about quality teaching. Prior to joining the Queensland College of Teachers, Deanne worked as a secondary teacher and Head of Department in rural and urban schools.

Mrs Catherine Cox-Wallis

Mount Barker South Primary School, SA

Catherine Cox-Wallis has been the Principal of Mount Barker South Primary School for the past five years and also led an International school in Hong Kong. She has a Masters in Policy, Leadership and Change from Monash University and is leading the new DECD initiative 'Numeracy and Literacy Plus' for leaders in the Heysen schools Partnership. Over the past five years she has driven a significant whole-school improvement agenda focused on accelerating students' literacy and numeracy outcomes, through the use of data-driven responsive and differentiated intervention processes. She is a passionate, innovative research-informed leader who advocates for all students' right to a quality education. Last year she was shortlisted for the SA Excellence in Teaching Awards.

Dr Liz Criddle

St Stephen's School, Greenwood, WA

Dr Liz Criddle is the Director of Teaching and Learning at an independent multi-campus school in Perth, Western Australia. Prior to this, she has worked at a leadership level in schools in both WA and NSW. She has a PhD in education from the University of Western Australia. She has many years' experience in educational leadership, organisational change, teacher quality, and curriculum development. Dr Criddle has served on a number of groups, including the School Curriculum and Standards Authority, ACARA,

Professional Teaching Council WA, WA College of Teaching Professional Standards, and professional associations.

Mr Matthew Cunnane

Noosa Pengari Steiner School, Doonan, Qld

Matthew Cunnane has been working in Steiner Schools for twenty years. He has worked in the United Kingdom, Australian Capital Territory, Victoria and Queensland. He spent many years teaching in the upper primary classes before moving into high school as a Humanities teacher. In 2006 Matthew transitioned into school administration as an Education Administrator, and eventually took up the position as the Deputy Principal at the Noosa Pengari Steiner School. In 2011 he was elected to the board of Steiner Education Australia (the national association of Steiner schools) and was appointed chairperson in 2014. He currently is working as a full-time high school teacher.

Mr Ronald Dando

St Therese Primary School, Torquay, Vic.

Ronald Dando is a Grade 5/6 Team Leader and Homeroom teacher. Ronald is currently studying a Masters course in Religious Education.

Mrs Debbie Darvell

St Mark's Primary School, Dingley, Vic.

Debbie Darvell is the principal of St Mark's Primary School in Dingley, Victoria. Previously she has held the roles of Deputy Principal and curriculum, literacy and level leader across a range of schools. She holds a special education qualification as well as a Master of Educational Studies. Debbie has a strong interest in contemporary learning communities and how teachers work collaboratively to enhance their knowledge and teaching practice with a focus on engaging students in their learning.

Ms Shelley Davidow

Noosa Pengari Steiner School, Doonan, Qld

Shelley Davidow is an educator, researcher and the author of 38 books. Her latest book *Raising Stress-Proof Kids* (Exisle, Australia 2014, Familius, USA, 2015) is based on research she conducted over several years with the Institute of HeartMath in California on the effects of different environments on children's stress-responses. She has taught internationally at schools and universities for the past eighteen years. In addition to being a full-time high school teacher in Queensland, she runs workshops on the impact and management of stress at home and at school. She is currently a doctoral student at the University of the Sunshine Coast, Queensland.



Ms Kate Davis

Richardson Primary School, ACT

Kate Davis is currently an Executive Teacher – Field Officer. She has worked as a school leader and classroom teacher at Richardson Primary School since 2010. Kate is a passionate and conscientious educator and strives to improve teacher capacity and student outcomes. She has facilitated Professional Learning Teams and progressed the implementation of high impact instructional strategies in classrooms.

Mrs Heather De Blasio

Wilderness School, Medindie, SA

Heather De Blasio is currently Director of Learning and Teaching Excellence at Wilderness School (Early Learning Centre to Yr 12) in Adelaide. This position entails leadership and oversight of curriculum, pedagogy, the teaching and learning and professional learning of the entire academic staff.

Mr Barry Dean

Brisbane Boys' College, Qld

Barry Dean has been the Head of Teaching and Learning at Brisbane Boys' College (BBC) since January 2003. He started his teaching career in the UK where he held the positions of Head of History and Head of Humanities Faculty in an all-boys school and a co-educational school (1976–1990). Barry moved to Brisbane in 1990. He has held the positions of Head of Humanities Faculty, Deputy Director of Studies prior to his current position in two schools, one all-girls and his current all-boys school. Barry has just completed his Masters on Tablet PC technology in the classroom. His academic discipline is History and he has strong interests in the Dimensions of Learning Teaching and Learning Framework and the use of linking technologies in education.

Ms Caroline Dean

Australian Science and Mathematics School, Bedford Park, SA

Caroline Dean is currently a science Teacher at the Australian Science and Mathematics School in Adelaide. She has been a Research Scientist for over 20 years and made the career switch to science educator upon the completion of a Masters of Teaching degree in 2010. One of her current interests is exploring teaching and learning strategies to support students to become Self-directed Learners. She has a specific focus upon developing effective, immediate feedback strategies to foster student self-confidence and readiness to promote increased levels of preparedness for tests and exams. This has involved the development of students as critical analysts for gaps in their own knowledge using assessment tools for learning that include Google forms and Flubaroo.

Mrs Jane Denny

Catholic Schools Office, Broken Bay, NSW

Jane Denny is an Education Officer for Curriculum, Teaching and Learning with the Catholic Schools Office, Diocese of Broken Bay. Her key priority is improving learning outcomes for students by engaging teachers and leaders in relevant, targeted professional learning experiences. She has been an Assistant Principal, a Literacy Facilitator and a classroom teacher in a range of schools across NSW.

Mrs Amy Dugré

The Willows Community School, California, USA

Amy Dugré came to The Willows in 1995 as a second grade teacher; in 1998, she became the School's Director of Technology and spearheaded the school's transition to a 1-to-1 laptop program for grades 3–8. Amy works closely with faculty and staff to ensure seamless integration of technology in the curriculum and is distinguished as the pioneer for our in-house professional development program. She heads the STEAM-based faculty outreach program and designed the School's first maker space, innovations lab and STEAM classrooms.

Mr Gavin Dykes

Xavier High School, Albury, NSW

Gavin Dykes is the Principal of Xavier High School and is a founding member of the @Xavier project. With an explicit focus on writing, using data to inform that focus, working collaboratively in teams to plan, teach and assess, the @Xavier project gives students a strong skill base moving toward their Higher School Certificate. Gavin has a passion for technology being an essential resource in the teachers' toolbox and has mobilised resources in the school for that purpose using Chromebooks, the Google suite of applications, and Schoology as a Learning Management System has meant that the teachers in the @Xavier project have the best tools available to place their work, give quality feedback to students and parents, and serves as an online reporting system to parents. Gavin has worked in six schools in Victoria, New South Wales and in the United Kingdom, he has a Master of Education and Administration from the University of London.

Ms Jo Earp

ACER

Jo Earp is the Editor of *Teacher Magazine*, published by ACER.

Ms Karen Endicott

Sarah Redfern High School, NSW

Karen Endicott is the Principal of Sarah Redfern High School in Minto, NSW.



Dr Rebecca English

Queensland University of Technology

Dr Rebecca English is a Lecturer for the School of Curriculum within the Faculty of Education at Queensland University of Technology. She was a teacher in both the Catholic Education and Education Queensland sectors for seven years. She holds a PhD from Griffith University.

Mrs Catherine Eppen-Van Der Aa

Mandurah Baptist College, WA

Catherine Eppen-Van Der Aa has been teaching for 19 years predominately in the Catholic and Independent school sectors. She is currently the Head of Learning Area of Humanities at Mandurah Baptist College, 70 km south of Perth. Currently completing her PhD in Education she is passionate about learning and improving the school experience for all her students. Recent accomplishments include: co-producing a documentary, *Memory Forever*, to commemorate the 100th anniversary of the ANZACs; organising two study tours with students to the Western Front and China; contributing to students attending Youth Parliament and the Constitutional Convention in Canberra; creating iBooks as a tool for learning; participating in the School Curriculum and Standards Authority judging standards program to accredit the Australian Curriculum; and acting as a WA Certificate of Education marker for Modern History.

Mrs Susan Evans

Education Queensland

Educator, Queensland Education Leadership Institute Coach and Regional Project Officer, Susan Evans is passionate about education and building the capability of others, her skill lies in linking pedagogy to learning through the use of purposeful data and genuine collaboration. Susan has had various school experiences in Melbourne, London, Toowoomba and Stanthorpe. These diverse places introduced her to the importance of relationships, the diversity of individuals and their ideas and the power of communication. The one common feature has been to work with both children and adults to help them achieve their absolute best.

Ms Sheri Evans

Medina Primary School, WA

Sheri Evans has had extensive experience leading innovation in the areas of leadership, literacy, numeracy and equity at a school, regional, state and national level. She has led programs in the areas of early childhood, adolescent literacy, comprehension and the development of conceptual skills in Mathematics. As a Deputy Principal at Medina Primary School, she dedicated herself to improving the literacy and numeracy skills of Aboriginal students through

increasing engagement and ownership of learning. This initiative led to a dramatic increase in literacy and numeracy skills and behaviour, halving the number of students at severe educational risk in nine months. As a result of this success many schools in WA are experimenting with elements from this initiative.

Ms Linda Fox

Port Augusta/Quorn Partnership, SA

Linda Fox is currently a Coordinator of Primary Australian Curriculum, working across several schools, in regional South Australia. She has presented at a Literacy Leaders Network conference and across numerous schools, to demonstrate that data can be used to drive pedagogical change in teachers to better meet the needs of students. Linda is passionate about reading and making data count.

Ms Rebecca Freakley

Woodbury Autism Education and Research, NSW

Rebecca Freakley gained a Bachelor of Arts-Psychology and a Diploma in Education (Primary) from Macquarie University in 2009. During her undergraduate years, Rebecca became acquainted with Applied Behaviour Analysis working as a behaviour therapist for Aspire, and later on for Assessments and Behaviour Interventions NSW. This home therapy involved working with children and families affected by Autism Spectrum Disorder. Rebecca became a full-time teacher at Woodbury Autism Research and Education Centre in July of 2010. Currently, Rebecca is studying to obtain a Masters in Special Education through Newcastle University, with the intent to specialise in emotional and behavioural disturbances.

Ms Lesley Gardner

Xavier High School, Albury, NSW

Lesley Gardner is the Key Learning Area Coordinator of English at Xavier High School and serves as team leader of the @Xavier project team. Lesley has been a founding member of the team, blending her passion for English and integral role across all subject areas with a deep-seated belief that writing skills across the school need to be lifted to generate improvement all subjects. Lesley has been a key driver in the push towards an explicit focus on writing skills, and worked closely with the team to push towards targets on improving writing. Lesley has been teaching for 24 years and across two states.

Mr Paul Gavin

Sarah Redfern High School, Minto, NSW

Paul Gavin is the National Partnerships Manager at Sarah Redfern High School.



Ms Megan Gerathy

La Salle Academy, Lithgow, NSW

Megan Gerathy works in the English Faculty at La Salle Academy, Lithgow. Megan has a keen interest in developing assessment and feedback strategies that help students improve their writing skills.

Ms Kristy Grady

Richardson Primary School, ACT

Kristy Grady has been an educator in the ACT for 13 years. She is a dedicated and enthusiastic professional who seeks understanding of best practice and high impact strategies to improve learning outcomes for students. Kristy commenced teaching at Richardson Primary School in 2007 and in this time has worked as a classroom teacher and as a member of the leadership team. In 2013 she won a substantive position as an Executive Teacher Professional Practice. In this role she is able to implement and model best practice at a classroom level.

Hajah Siti Hasara Haji Matussin

Rimba II Secondary School, Brunei

Hajah Siti Hasara Haji Matussin is an Education Officer at Rimba II Secondary School, Brunei.

Haji Hairol Azaman Haji Pungut

Rimba II Secondary School, Brunei

Haji Hairol Azaman Haji Pungut is an Education Officer at Rimba II Secondary School, Brunei.

Haslinah Haji Zali

Rimba II Secondary School, Brunei

Haslinah Haji Zali is an Education Officer at Rimba II Secondary School, Brunei.

Miss Sally Harris

Presbyterian Ladies' College, Burwood, Vic.

Sally Harris is a passionate and innovative educator with experience in a range of educational settings, both in Australia and internationally. Currently working as a classroom teacher, she strives to foster in her students a love of learning and, in her role as Junior School Mathematics Coordinator, she nurtures and supports the staff at Presbyterian Ladies' College to teach and assess Mathematics for understanding. With a Masters degree from Cambridge and an enthusiasm for a well-organised spreadsheet, Sally thrives on challenges and is constantly looking for ways to use assessment data to improve teaching and learning.

Dr Elizabeth Hartnell-Young

ACER

Dr Elizabeth Hartnell-Young is Director of the ACER Institute, which offers evidence-based professional learning opportunities building on ACER's research strengths, such as school improvement and assessment for improving learning. She leads the development and online provision of postgraduate courses for ACER, a registered higher education provider since 2014. Currently she is leading the Reforming Educational Assessment Project in ACER's Centre for Assessment Reform and Innovation, including the Rolling Summit, designed to create discussion and consultation opportunities among educators, and including the Excellence in Professional Practice Conference (EPPC) and the Research Conference 2015, in Melbourne in August.

Professor John Hattie

The University of Melbourne, Vic.

Professor John Hattie is Director of the Melbourne Educational Research Institute and Professor of the Melbourne Graduate School of Education at the University of Melbourne, Chair of the Board of the Australian Institute for Teaching and School Leadership, and a Chief Investigator in Australia's Science of Learning Research Centre. Professor Hattie's influential 2008 book *Visible Learning: A synthesis of over 800 meta-analyses relating to achievement* is believed to be the world's largest evidence-based study into the factors which improve student learning.

Ms Andrea Hayes

Brisbane Youth Education and Training Centre, Qld

Andrea Hayes is a Head of Department Curriculum at the Brisbane Youth Education and Training Centre. She is an experienced teacher who has worked extensively with at-risk adolescents. She manages literacy and numeracy curriculum initiatives and diagnostic testing at the Brisbane Youth Detention Centre.

Mr Mark Hendon

Cannington Community College, WA

Mark Hendon graduated from Edith Cowan University, (formerly Churchlands Teachers College) with a Diploma of Teaching in 1983 and completed a Bachelor of Education in 1991. He has a long-held interest in self-reflective practices in improving the quality of teaching practice in himself and others. As an administrator/school leader he has encouraged staff to take on some of these practices, that is, Classroom Observations, Instructional Rounds, Learning Walks and especially Watching Others Work.



Mrs Christine Hills

Gladstone State High School, Qld

With six years' experience as a primary Principal, Christine's focus has been on ensuring school improvement resulted in real change for student outcomes. After receiving the Public Education Foundation Scholarship in 2014, Christine completed a leadership course at Harvard, where she became aware of the work of Professor John Collins on developing student knowledge and skills with Writing across the curriculum. She has used learnings from Harvard to enhance the highly successful programs she has developed in primary schools in Central Queensland. Taking a leadership role at Gladstone SHS in 2015 has enabled her to take these programs into the secondary sector. Christine's work with school leadership teams and school improvement was acknowledged by the Australian Council of Educational Leadership (Qld) with an Honorary Fellowship in 2014. She won an Outstanding Presentation Award at EPPC 2014.

Mr Philip Holmes-Smith

School Research Evaluation and Measurement Services, Vic.

Philip Holmes-Smith is the founding director of School Research, Evaluation and Measurements Services (SREAMS). He is an experienced teacher, school professional learning facilitator, educational psychometrician, statistician, researcher, and program evaluator. Philip began his professional career as a secondary teacher of Science, Biology and Mathematics teaching at several Victorian government secondary schools in the 1970s and 80s. His post-graduate studies in the fields of program evaluation, educational research and educational policy resulted in a move to head office of the Victorian Department of Education as a research, evaluation and policy officer. At the end of 1996 he left the Department of Education to begin School Research, Evaluation and Measurements Services, where he continues to be contracted to a number of state education departments and curriculum authorities in Australia to undertake educational research, curriculum evaluations, resource allocation modelling and psychometric analysis of state-wide/national testing programs. Philip spends majority of his time working in schools helping teachers collect, analyse and interpret assessment data to inform their teaching.

Professor Helen Huntly

Queensland Deans of Education Forum

Professor Helen Huntly is Dean of the School of Education and the Arts at Central Queensland University. Helen has worked at the university for 26 years, after a successful teaching career with Education Queensland. She is currently the Chair of the Queensland Deans of Education Forum, and Deputy President of the Australian Council of Deans of Education. She is a member of the National Initial Teacher Education Advisory Committee convened by the Australian Institute for Teaching and School Leadership. Helen is a Life Member and founding Board Member of the Bundaberg YMCA, and was a long time committee member of the Bundaberg Family Day Care Scheme. She is currently the Deputy Chair of the Board of IMPACT, a large regional training and employment organisation.

Dr Wes Imms

The University of Melbourne, Vic.

Dr Wesley Imms, MA, PhD, is currently a Senior Lecturer in the Melbourne Graduate School of Education, as well as that School's Head of Visual Art Education, and its Research Higher Degree Coordinator for Curriculum and Teaching.

Dr Lawrence Ingvarson

ACER

Lawrence Ingvarson is a Principal Research Fellow at the Australian Council for Educational Research. His major research and policy interests include teacher education and professional development, teaching standards and professional certification systems, and performance-related pay for teachers. He is a Fellow of the Australian College of Educators and a recipient of the Distinguished Service Award from the Australian Science Teachers Association (2001). In 2014 he was awarded the Sir James Darling Medal for outstanding and sustained contribution to Victorian education by the Australian College of Educators. Recent books include *Assessing Teachers for Professional Certification: the First Decade of the National Board for Professional Teaching Standards*. The book brings together the rigorous research and development work conducted on teaching standards and performance assessments by the National Board for Professional Teaching Standards in the USA.



Mr Colin Johnson

Bundaberg State High School, Qld

Colin Johnson is the Head of Department, Mathematics, at Bundaberg State High School. Colin took up the position of HOD in 2012. During this time he has led the implementation of the Australian Maths Curriculum. He has led the implementation of the Numeracy Success program in the school to increase student engagement in Mathematics and ensure that students recognise the need to be able to reason and justify their mathematical knowledge and decision-making.

Ms Sally Julian

Huntingdale Primary School, WA

Sally Julian has been involved in primary school education for more than three decades. She has been a classroom teacher in a range of year levels. She has worked as a fully trained literacy specialist, providing professional support to colleagues, assistance with planning, modelling of exemplary classroom practice and the collection of relevant data to inform classroom teaching. She has held a number of leadership roles in a number of schools, leading staff through curriculum changes and providing professional support. Sally is a key member of the development team of the recently released English Tracker Monitoring System. Sally is also the Treasurer of the Schools Development Group, the not-for-profit association implementing the Maths and English Trackers. At present she is Assistant Principal at Huntingdale Primary School.

Ms Tamara Kidd

The University of Newcastle, NSW

Tamara Kidd is a Masters of Education (International Comparative and Curriculum Studies) student, home educator and teacher. Her writing about homeschooling in NSW has been published in Newcastle's Child magazine. Her interest in education began in 1990 when she commenced tutoring in piano and maths. She participated as an artist in 11 exhibitions, before undertaking degrees in primary teaching and history. In 2007 she began tutoryourownchild.com, an educational consultancy business, as she had been assisting parents on how to tutor their own children for more than 10 years. Tamara helps parents with their schooled children, and also assists new and established home educating parents through the Home Education Association (HEA) since 2006 as a volunteer and committee member. She is a mother of two lovely children and together the three of them engage in learning daily, as passionate and committed lifelong learners.

Miss Judith King

Coordinator Regional Services, Department of Education, WA

Judith King has worked for the Education Department in both Victoria and Western Australia in a range of roles since 1999, as a classroom Teacher, Deputy Principal, Principal and now as Coordinator Regional Services in the Goldfields, Western Australia.

Dr Pellumb Klllogjeri

University of Elbasan, Albania

Dr Pellumb Klllogjeri has been a Lecturer at the University of Elbasan since September 2004. At present he lectures on the following subjects: Probability and Statistics; Graph Theory; Financial Mathematics and Linear Programming; Use of computer programs for teaching Mathematics such as GeoGebra software and Mat Lab. He is the geometry author of many papers and of one book (published by Lap-Germany).

Mr Adrian Klllogjeri

Kingston University, UK

Adrian Klllogjeri is a Masters of Science student in Applied Econometrics at Kingston University in the United Kingdom.

Ms Deb Lasscock

Flinders Centre for Science Education in the 21st Century, Flinders University, SA

Deb is a primary school teacher who has worked in a diverse range of schools across South Australia. This has been with learners from Early Years to Year 7. Currently she works with the Science C21 team at a range of sites to develop Mathematics curriculum in a way that will enable students to improve their executive functions. This relates strongly to the proficiency strands of the Mathematics curriculum.

Mrs Tania Leach

Education Queensland, Darling Downs South West Region

Tania Leach is a Regional Project Officer in the Darling Downs South West Region for Education Queensland and member of the Leadership Research International at the University of Southern Queensland. Tania's role has a strong focus on Educational Research. She has a MA in Curriculum and Pedagogy and is a current Doctoral Candidate with a focus on the role of meta strategic thinking in leadership. She has taught students from Prep to year 12, worked within the roles of Head of Department and Principal, and is guest lecturer at the University of Southern Queensland. Her current regional and inter-regional projects include: 'The impact that parallel leadership has on developing whole school coaching and feedback cultures', 'Purposeful pedagogy: improving numeracy outcomes' and 'Diving into data: Shifting the spotlight from teaching to learning'.



Ms Ingrid Lees

Parafield Gardens High School, SA

Ingrid Lees teaches at Parafield Gardens High School, a low-SES northern suburbs high school in Adelaide. Ingrid holds two separate coordinator roles for Cross-Disciplinary Studies and for Evidence Based Improvement, and is a long-term teacher of the Year 12 SACE Research Project. With an interest in determining what educational research works best for her students and peer teachers, Ingrid shares her professional learning online under the name 'Empirical Educator' through both Facebook and Twitter. Ingrid also runs a successful 'Research Project' Facebook page which supports teachers across South Australia.

Ms Daniela Leone-Welfare

Flinders View Primary School, Port Augusta, SA

Daniela Leone-Welfare is a Year 2/3 teacher in Port Augusta with seven years' experience. She has had a strong involvement as a focus teacher in the Empowering Local Learners Project. Being a focus teacher in this project Daniela has worked closely and collaboratively with Flinders University and a range of teachers from surrounding schools. She has worked with colleagues to change their and her own practice by developing a deeper understanding of Mathematics, questioning, open-ended tasks and the executive functions. This has led to a shift in students PAT Maths results, engagement, problem solving and reasoning skills.

Ms Brenda Little

Beenleigh State High School, Qld

Brenda Little is HOD Teaching and Learning at Beenleigh SHS, situated in a low-socio economic area on the cusp of Logan City and the Gold Coast. She began her career as a music teacher and made the transition to Student Services in 2007. Her responsibilities include the management of learning support, the indigenous agenda, EAL/D and digital pedagogy. In 2014, Brenda also assumed the role of cross-curricular literacy manager and in 2015 added data management, analysis and sharing to her portfolio.

Dr Shantha Liyanage

Department of Education and Communities, NSW

Dr Shantha Liyanage is a research coordinator at the Department of Education and Communities and a professorial fellow of the University of Technology, Sydney. He held senior academic positions as the Associate Professor and Director of Technology Management Centre of the University of Queensland where he developed innovative eLearning postgraduate programs in technology and innovation management. During his professorial tenure at the University of Auckland, New Zealand, he contributed to disciplines

of leadership, innovation and entrepreneurial research and teaching. He also held professorial appointments with the Macquarie University in Sydney and the University of Technology Sydney and has contributed to teaching and research in innovation and entrepreneurial learning. He was active with international researchers and engaged in leadership research with physicists in the ATLAS project of the European Organization for Nuclear Research (CERN) in Geneva. He completed numerous consultancy assignments for various governments, International development Agencies such as the Asian Development Bank, the World Bank, the United Nations Educational, Scientific and Cultural Organization, the United Nations Industrial Development Organization, the Swedish International Development Cooperation Agency, and AusAid. He is the editor-in-chief of the International Journal of Learning and Change, Inderscience, UK.

Mr Neil Lloyd

Brisbane Youth Education and Training Centre, Qld

Neil Lloyd is Deputy Principal at the Brisbane Youth Education and Training Centre, an Education Queensland school within the Brisbane Youth Detention Centre. He has worked as a teacher in the youth detention system for 13 years and is currently responsible for managing the school improvement agenda at BYETC. His EPPC 2014 paper won an award.

Mr Shane Loader

Port Augusta/Quorn Partnership, SA

Shane Loader is a Mathematics Coordinator who has been teaching in Port Augusta, 300 km north of Adelaide, for the last 12 years. For the last four years he has been a numeracy coach, first in his own school and now across the 17 schools and pre-schools that make up the Port Augusta/Quorn Partnership. A major part of Shane's role is managing the Empowering Local Learners Project which aims to improve student's Maths outcomes through a focus on improving executive functioning. He has a passion for ensuring that problem solving and reasoning play a pivotal role in his student's Mathematical development.

Professor Lori Lockyer

Macquarie University, NSW

Professor Lori Lockyer is the Vincent Fairfax Family Foundation Chair in Teacher Education and Head of the School of Education at Macquarie University.



Mrs Wendy Luscombe

Education Queensland

Wendy Luscombe is currently working as a Regional Project Officer – Curriculum, Pedagogy and Learning in the Darling Downs and South West Queensland Region for Education Queensland. Wendy is passionate about literacy and is interested in how teachers can work in professional learning communities to enhance professional growth and improve student learning outcomes. Wendy has recently moved to a regional position from a large primary school where she was Head of Curriculum. She has many years of classroom teaching experience, has worked as an English advisor, is a functional grammar and First Steps tutor, and is an active member of the Darling Downs Local Council of Australian Literacy Educators' Association.

Mrs Karen McCord

Bundaberg State High School, Qld

Karen McCord, BMSH Ed, Master of Education, is the Principal at Bundaberg State High School. Karen arrived in Bundaberg at the start of 2014 and since that time has worked closely with the school leadership team and staff to continue to improve student outcomes. Karen has a curriculum background, having led school curriculum reform from Outcomes to New Basics and most recently Australian Curriculum, across numerous schools in South East Queensland.

Mr Toby McIlrath

Rhinomed and Camberwell South Primary School, Vic.

Toby McIlrath is an Australian education consultant, medical researcher and primary school teacher who has committed his career to inspiring excellence in schools, for all community members. Toby has held various leadership positions in both the independent and government sectors, which have given him unique insight into the various barriers to performance excellence that students and educators face in the modern education system. Toby's latest passion has been the development of an inquiry approach program, which allows members of school communities to harness responsibility for their own wellbeing, and inspires self-driven change for personal development and improvement. Toby holds a Master of Education postgraduate degree from Melbourne University, a Bachelor of Education (Primary) and a Bachelor of Applied Science (Human Movement).

Ms Paula McMahon

Queensland College of Teachers

Paula McMahon is Manager, Accreditation and Professional Standards, at the Queensland College of Teachers. Paula works directly with Queensland universities in relation to the national accreditation of Initial Teacher Education programs, and contributes to the development and implementation of state policies regarding teacher professional standards and other initiatives to enhance teacher quality. Paula has also worked as a secondary Health and Physical Education teacher, opened a new school as the foundation Head of Department – Middle School, and provided leadership development opportunities for aspiring middle managers in Queensland state schools.

Mr Robert Marshall

ACER

Robert's role at ACER is focused on using the National School Improvement Tool (NSIT) framework to assist schools improving their performance and to develop evidence based school improvement plans. Robert conducts professional learning programs for schools and school leaders across systems, diocese and governments and delivers keynotes on school improvement at conferences across Australia and Internationally. Robert has taught and held senior positions in school in the ACT, South Australia and Victoria..

Dr Jane Mitchell

Charles Sturt University, NSW

Jane Mitchell works in the School of Teacher Education at Charles Sturt University in Bathurst. She has a long-standing interest in partnership research with schools.

Mrs Kimberley Morgan

St Monica's Primary School, Footscray, Vic.

Kimberley Morgan is a junior level classroom Teacher, Learning and Teaching Leader and School Mathematics Leader at St Monica's Primary School, in the inner western suburbs of Melbourne. She has taught at a range of schools across Melbourne during her 19-year career, with a particular passion for teaching students in the early years and students with English as an Additional Language backgrounds. Working as a Mathematics Leader in schools, Kimberley has spent time developing a coaching and mentoring role, as well as implementing strategic plans for school improvement. She is also working with Monash University as a pedagogical consultant developing an educational app.

Mr Josh Morris

Bundaberg State High School, Qld

Josh Morris has a Bachelor of Education and is Senior Middle Head of Department – Student Performance Junior Secondary at Bundaberg State High School. Josh started teaching at Bundaberg State High School in 2012 and immediately was placed into the role of numeracy mentor. He has been the 'go to man' for student data since he began, which landed him in the role of Head of Student Performance. Josh has led the implementation of the Numeracy Success program focusing on using teams of teachers to create and deliver resources aligned to specific student weaknesses. This has driven student improvement in numeracy and student disposition towards Mathematics.

Mr Shane Morris

Catholic Education Diocese of Parramatta, NSW

Shane Morris, Manager, Student Services, System Learning, Catholic Education Diocese of Parramatta has worked in Catholic Education for the past 19 years. Shane has experience as acting Principal, Assistant Principal, Year Coordinator and teacher of Human Society and Its Environment in secondary schools. His research interests include personalising learning for students and building teacher capacity to respond to the needs of students with disabilities or additional needs.

Ms Nicole Morton

Xavier High School, Albury, NSW

Nicole Morton is Assistant Principal – Leader of Learning at Xavier High School, having joined the school this year from Hennessy Catholic College Young. Nicole held the position of Director of Growth and Performance at Hennessy Catholic College working closely with staff to improve pedagogical practices within a coaching framework. Nicole has presented at the International Conference for Positive Education and Psychology. In a short space of time, Nicole has helped shift the learning landscape at Xavier to focus on high expectations of staff and students, the use of data to inform practice, coaching, collaboration and focus on quality assessment. Her experience in shifting and refocusing cultural change within schools enhances the @Xavier project and the foundation work of her predecessors.

Ms Vicky Muir

Wandana P-7 School, Gilles Plains, SA

Vicky Muir has been a classroom teacher since 1989. In 2009, Vicky came to Wandana P-7 School as the school's science teacher. Despite her obvious passion for science, Vicky chose to return to a regular classroom in order to indulge her other passion for high level learning outcomes

through encouraging student engagement and wellbeing. The Principal at Wandana describes Vicky as 'very creative in the way she engages her students with the learning program'. Enter Vicky's classroom and you will see the principles of the neuroscience program embedded in all levels of practice. You will see calm, creative and inquisitive students who enjoy learning.

Sara Murray

Charles Sturt University, NSW

Sara Murray lectures in adolescent psychology in the School of Teacher Education at Charles Sturt University. She has many years' experience as a psychologist working with young people.

Dr Bronte Nicholls

Australian Science and Mathematics School, Bedford Park, SA

Bronte Nicholls is currently Director, Innovative Pedagogy at the Australian Science and Mathematics School in Adelaide. She has been a leader in both government and non-government schools and held positions with state-wide responsibilities in the Department for Education and Child Development, the Future SA Certificate of Education Office and the SACE Board. She has been involved in senior secondary curriculum and assessment development in the Science area since the late 1980s. One of her current interests is exploring teaching strategies to support students to become self-directed Learners. This has involved the development of an in-school inventory to measure student's level of self-directedness and teacher intervention strategies to develop these skills.

Ms Donna Nitschke

Department for Education and Child Development, SA

Donna Nitschke is currently the Coordinator Neuroscience in the Classroom across a partnership of four Adelaide primary schools. She has worked in the field of education for most of her adult life and been employed as a teacher at all year levels from preschool to year 12. She has lectured at university as well as TAFE and worked for a number of specialist educational organisations including Autism SA (as a member of the diagnostic team and as a consultant teacher), the Down Syndrome Society and Novita. Donna served as a Senior Project Officer for the Ministerial Advisory Committee: Students with Disabilities for a few years, but missed being actively part of teaching. In 2006, Donna completed the Graduate Certificate in Neuroscience (Learning). Since 2009 she has been developing and implementing the 'Being the Best Learner You Can Be' program.





Ms Stephanie Nitschke

St Therese Primary School, Torquay, Vic.

Stephanie Nitschke is the Grades 5 and 6 Homeroom Teacher at St Therese Primary School. Stephanie is currently undertaking study in the field of Religious Education. She co-presented at the Mathematical Association of Victoria Conference in December 2014.

Ms Cassandra O'Boyle

Chifley College Shalvey Campus, NSW

Cassandra O'Boyle works at Chifley College Shalvey Campus in the position of Head Teacher Teaching and Learning. A trained Human Society and Its Environment (HSIE) teacher, she has experience in literacy and differentiation for English as an Additional Language/Dialect students. As a new graduate, Cassandra has participated in the Australian Government Quality Teacher Program and has worked as a Transition Advisor for disengaged and at-risk students. Cassandra's participation in the NSW ESL Pedagogy Project as a teacher and supervisor provided her with the opportunity to lead staff in effectively differentiating the curriculum, with a focus on utilising literacy frameworks as pedagogical method for student improvement. Cassandra's current focus is linked to aligning school-wide professional learning on programming and literacy with the progression of skills in the Australian Professional Standards for Teachers. She has coordinated school-wide professional learning and led the implementation of the school's Teaching and Learning Policy.

Mr Matthew O'Brien

Brisbane Boys' College, Qld

Matthew works as a Science teacher and the Head of Strategic Planning at Brisbane Boys' College, a secondary school in Brisbane, Australia. He enjoys using technology and finding ways that educators can leverage it to do things better, more efficiently and more interestingly. Matthew has a huge interest in educational interfaces, especially the stylus/touch/tablet, and video instructional content. He is also one of the weird people that really love playing with data and getting into the hands of non-data-lovers so they can impact student learning in better ways. In 2006 Matthew was awarded the Queensland Premiers award for Science teaching, and in 2014 was accepted as one of the global members of the Microsoft Innovative Educator Expert program.

Mr Timothy O'Leary

Wesley College, Melbourne, Vic.

Timothy O'Leary has 10 years' experience as a teacher and a strong interest in using data to improve student learning. Prior to become a teacher Timothy trained as a geomatic engineer and worked as an information technology analyst for PricewaterhouseCoopers. Timothy's current role at Wesley College is focused upon working with staff to better use student data to improve student learning outcomes. Additionally, Timothy is a PhD student at Melbourne University working with Professors John Hattie and Patrick Griffin.

Mrs Deb O'Neill

Gilles Street Primary School, Adelaide, SA

Deb O'Neill is a trained primary educator. She has worked in many disadvantaged schools across South Australia and has been a Principal for the past 15 years. She is passionate about social justice and ensuring that all students receive quality education. She has led many change initiatives across her schools including being Microsoft Partners in learning and Learning to Learn School with a focus on empowering students and developing teacher pedagogy. As principal of a Host Teaching for Effective Learning (TfEL) Pilot site she has worked collaboratively with the TfEL Pilot Leader, Vicky Bitzios and her staff to lead deep thinking and reflection on teacher practice using student voice through the TfEL Compass tool as a driving force for change.

Ms Leah O'Shea

St Paul's Primary School, Coburg, Vic.

Leah O'Shea is a Senior Curriculum Leader in English and a Years 3 and 4 classroom teacher at St Paul's Primary School in Victoria. She joined the team at St Paul's in 2014.

Ms Virginia Outred

Catholic Schools Office, Broken Bay, NSW

Virginia Outred is an Education Officer for Curriculum, Teaching and Learning with the Catholic Schools Office, Diocese of Broken Bay. Her key priority is improving learning outcomes for students by engaging teachers and leaders in relevant, targeted professional learning experiences. She has been an Assistant Principal, Literacy Facilitator and classroom teacher in a range of schools across NSW.



Dr Sofia Pardo

Department of Education and Training, Vic.

Dr Sofia Pardo is a Senior Researcher with the Department of Education and Training leading the research on the Classroom of the Future project, a joint partnership with La Trobe University, Charles La Trobe College and Intel. Sofia completed her PhD at the University of Melbourne in 2009 in the field of Child-Computer Interaction and has since worked with teachers and school leaders in Victorian government schools supporting evidence-based practice around the use of technologies to support contemporary learning and teaching.

Ms Cath Pearn

ACER and The University of Melbourne, Vic.

Cath is a Senior Research Fellow in the ACER Institute. In this role she has written, delivered and reviewed programs for primary and secondary teachers in Australia and overseas. As a lecturer in Mathematics Education at the University of Melbourne Cath teaches early childhood, primary, secondary and special education students at postgraduate level. Since 1992 she has been involved in research projects investigating how students learn Mathematics at the early childhood, primary, secondary and tertiary levels, particularly students mathematically 'at risk'. Her current PhD research is looking at the links between fraction competence and algebraic thinking.

Mrs Marielouise Phillips

Catholic Education Office, Vic.

Marielouise Phillips is School Adviser, Mathematics, at the Catholic Education Office Melbourne. During her five years with the office, she has worked in collaboration with many primary schools across the archdiocese. In partnership with these schools, she develops and implements strategic plans for improving Mathematics learning and teaching at the school level, as well as designing and delivering professional learning at a system level. Before joining the office, Marielouise always had a passion and special interest in leading and teaching Mathematics during her time as a primary school teacher in the Western Suburbs of Melbourne. Marielouise completed her Master of Education in Mathematics with particular focus on leadership and professional learning.

Mr Mark Picman

La Salle Academy, Lithgow, NSW

Mark Picman is curriculum leader in the Technology and Applied Studies Faculty at La Salle Academy. A focus of Mark's recent work has been the design and use of rubrics to support student motivation and learning in Technology and Applied Studies classrooms.

Mr Rob Proffitt-White

Education Queensland

Rob Proffitt-White has been an active Principal Education Advisor of Mathematics in Queensland since 2012. As a member of the Regional Numeracy Success team he has been able to initiate and sustain whole school pedagogical change in effective delivery of Mathematics and Numeracy, targeting student disposition and teacher growth in these key areas. His attention more recently has been with P-12 colleges and state high schools.

He has initiated an Inter Regional Numeracy project involving training Principals and Numeracy Leaders in Darling Downs South West (DDSW) and Central Queensland.

Mrs Masjuwita Puteh

Rimba II Secondary School, Brunei

Mrs Masjuwita Puteh obtained a Master of Education in Mathematics at the Universiti Brunei Darussalam in the Year 2014. She is currently an Education Officer and a Subject Leader at the Department of Mathematics, Rimba II Secondary School, Brunei Darussalam. Masjuwita's research areas focused mainly on meaningful teaching and learning lower secondary Mathematics using Manipulatives with a Learning Study approach. She is on the committee of the 'Back to Basic' Numeracy Program for all Year 7 students in Rimba II Secondary School. She was one of the organising committee and also presented a paper during The World Association of Lesson Studies International Conference, 2010, UBD, Brunei Darussalam. In November 2014, under her coordination, Rimba II Secondary School Lesson Study committee won 2nd runner up during the Subject Based Committee Mathematics Project.



Ms Jan Raymond

South Australian Certificate of Education Board

As Executive Manager, School Assessment Services, Jan Raymond is responsible for: the policies and overall management of the quality of school-based assessments for the SA Certificate of Education, managing quality assurance procedures for the consistent application of performance standards in Stage 1 and Stage 2 school-based assessments; providing assistance to schools to strengthen school-based assessment practices. These practices include: providing feedback/information to schools at key points of the assessment/moderation cycle to strengthen the use of performance standards; using statistical systems to monitor and oversee the investigations into significant variations between the external and school-based assessment of Stage 2 subjects; and managing the systems for timely and, where appropriate, decentralised approval of SACE Learning Assessment Plans and local programs. She was a senior secondary Mathematics teacher prior to work at the SACE Board.

Mrs Dena Reddan

St Therese Primary School, Torquay, Vic.

Dena Reddan has been Leader of Learning and Teaching at St Therese Primary School for the past three years. During 2013, she presented papers at the 21st Mathematics Innovation Conference, Montenegro, as well as the Mathematics Association of Victoria Conference at La Trobe University with Stephanie Nitschke.

Mr Anton Reiter

Effective Curriculum Ideas, Vic.

Anton Reiter is a primary school teacher and educational consultant from Melbourne. He is the creator of The Progressive Capacity Frameworks and The Progressive Capacity Matrices. He has a Bachelor of Teaching (Primary) from Melbourne University (2006), a Bachelor of Business (Management) from Victoria University (2003) and an Enhanced Certificate IV in Information Technology (Programming) from Holmesglen Institute in 2000. Anton has held a number of coordinating roles, taught in England and spoken at a conference for innovative educators in Canada. He has developed and sourced ICT resources for every content descriptor, elaboration and standard for the Australian and AusVELS Mathematics curricula for F–7. Using these extensive resources, he has been delivering blended and flipped classroom practices to enable differentiated and personal learning experiences in multi-age/composite senior years primary classrooms. It was the implementation of this mode of teaching that directly led to the development of The Progressive Capacity Frameworks.

Mr Ed Roper

Brisbane Grammar School, Qld

Ed Roper is Deputy Headmaster, Staff and Community Relations, at Brisbane Grammar School (BGS). He commenced at BGS as a teacher of Mathematics and Science, and technical assistant within the school's then fledgling computer department. Ed has since had a number of roles including Head of Year, Head of Mathematics, Assistant to the Headmaster – Planning, and in the early 2000s planned, opened and led the School's Middle School. In his current position he oversees the Advancement and Community Relations Office; the ICT environment at the School, through the Director of ICT; industrial relations and all aspects of the School's teaching development program. In this latter role Ed has been working very closely with staff to build and incorporate the BGS specific expression of the Charlotte Danielson Framework for Teaching as the underpinning of teaching development.

Ms Lisa Rosenstein

The Willows Community School, California, USA

Lisa Rosenstein is the founding head of The Willows Community School, which opened its doors in 1994. She was also the founding head of Temple Isaiah Day School in Los Angeles; prior to that, she served as the Judaic Studies Curriculum Coordinator for kindergarten through third grade at the Steven S. Wise School and was among the pioneers there in integrating general studies with Judaica.

Professor Pankaj Sah

Queensland Brain Institute, University of Queensland

Professor Pankaj Sah is the Director of the Science of Learning Research Centre, which aims to integrate neuroscience, education and psychology to straddle the three themes of Understanding, Measuring and Promoting Learning. A neuroscientist with research interests in the role of the amygdala in learning, Professor Sah holds a Bachelor of Medicine/Bachelor of Surgery from the University of New South Wales (1983) and was awarded a PhD in neuroscience from the Australian National University in 1988. He has held the position of Deputy Director (Research) at The University of Queensland's Queensland Brain Institute since 2007 and is a Co-Director of the Science of Learning Centre at The University of Queensland.



Mr Joe Salpietro

St Monica's Primary School, Footscray, Vic.

Joseph Salpietro is a middle level classroom teacher, and Social Emotional Learning Leader at St Monica's Primary School. He has taught in Melbourne's western suburbs for nine years. He has a particular passion for teaching students with English as an Additional Language backgrounds. Joseph has developed units of work that focus on personalised learning while attending to identified areas of need. He leads the school in the implementation of a scope and sequence for Social and Emotional Learning.

Ms Cathy Schultz

South Australian Certificate of Education Board

Cathy Schultz is the Manager, Moderation and Standards with the South Australian Certificate of Education Board.

Mr Paul Sheedy

St Paul's Primary School, Coburg, Vic.

Paul Sheedy is the Principal of St Paul's Primary School in Victoria. He was previously Principal of Holy Cross Primary School, New Gisbourne.

Miss Joanne Sim

High Performance, Department of Education and Communities, NSW

Joanne Sim is currently the School Assessment Design and Development Coordinator for the NSW Department of Education and Communities, which currently delivers an online diagnostic science test to over 55,000 students. She is an experienced and innovative classroom science teacher with extensive involvement in curriculum development, assessment and resource production for the NSW Department of Education and Communities, NSW Board of Studies, Teaching and Educational Standards and Science Teachers Association of NSW.

Mr Mark Sivills

Don College, Devonport, TAS

Mark Sivills is a Maths teacher at Don College; a Year 11 and 12 senior secondary college of around 1000 students in Devonport, Tasmania. He is originally from Manchester in the UK, where he taught at Salford City College before moving to Australia at the end of 2011. For the last two years he has been the Area Leader for Maths at Don College where he has developed a program of embedding formative assessment into all Maths courses at all levels. He has a keen interest in developing teachers' understanding of and use of formative assessment, building student capacity to learn from one another and developing curriculum in line with these principles. He has also developed successful peer mentoring programs both in the UK and Tasmania.

Mr Matthew Smith

Mount St Joseph Girls' College, Altona, Vic.

Matthew Smith is a leading teacher in secondary Catholic education with a keen interest in the use of statistical and diagnostic data to inform and guide learning across the curriculum. He has worked in Victoria and NSW, been involved in implementing the Victorian Certificate of Education in a Chinese setting and is the current Director of Learning Engagement at Mount St Joseph Girls' College, Altona. Over the past four years, Matthew has developed many different data programs to evaluate different pedagogical approaches across the secondary curriculum. He believes strongly in evaluating ability and growth and using these measures to assess the impact of different approaches.

Mr Anthony Speranza

St Mark's Primary School, Dingley, Vic.

Anthony Speranza is the Information and Communications Technology Learning and Teaching Leader at St Mark's Primary School in Dingley, Victoria. In his time at St Mark's, he has established several digital literacy initiatives, developed cyber-safety and global citizenship programs, and introduced multimedia software and hardware into Prep to Year 6 classrooms. Currently he is implementing a 1:1 Chromebook program and is supporting teachers and students to use Google Apps for Education. He is an authorised Google Education Trainer, Google Certified Teacher, and the recipient of the 2014 Digital Learning and Teaching Victoria Educator of the Year award. He is passionate about contemporary spaces, pedagogies, and collaborative practices amongst educators. Anthony is an avid speaker and facilitator at the local, national and international level.

Dr Robert Stevens

Department of Community Services, NSW

Dr Robert Stevens is a Manager, Research, in Policy Planning and Reporting in the NSW Department of Community Services – a position he has held for 15 years. He is an Adjunct Associate Professor in Education at the University of Western Sydney. Rob has a Doctorate in Philosophy from Macquarie University and a Master of Education (Education Policy) from the University of Sydney. His research interests include equity issues in education, and developing and assessing general capabilities.



Ms Gail Story

Catholic Education Diocese of Parramatta, NSW

Gail Story is a Leading Teacher with the Diverse Learning Needs team at Catholic Education Diocese of Parramatta (CEDP). Her experience in the last 23 years has been as a teacher, specialist teacher and leader in Catholic schools and with the DEC. Gail has a Degree in Special Education from the University of Technology Sydney, and a Graduate Certificate (Vision) from Flinders University. She has researched and led the CEDP strategy for students in the Third Wave.

Miss Heulwen Sweet

Charles La Trobe P-12 College, Macleod West, Vic.

Heulwen Sweet is a practising teacher at Charles La Trobe P-12 College. She currently teaches Auslan and Mathematics and has been in this field for the past eleven years. Heulwen is also a teacher of the Deaf and works closely with deaf students at Charles La Trobe College to improve their educational outcomes and personal goals. Her previous work experience includes working in the fields of multiple disabilities support work, integration, ICT and hospitality. Her interest in this field has grown from 23 years of practice using Auslan.

Ms Sabreena Taylor

Teacher Training Australia, NSW

Sabreena Taylor provides on-site consultancy services with Teacher Training Australia (TTA) for strategic school planning, school evaluation, change management, classroom practice, ICT and tailored Professional Learning. Sabreena is also Professional Learning Consultant – History – at TTA. Sabreena has presented at state and national conferences on topics such as online learning and using data in schools with Instructional Practices Inventories. Sabreena's career includes 27 years as a History teacher and 14 years as Head Teacher with NSW Department of Education and Communities, and Technology and Quality Teaching Consultant in Northern Sydney region. As Professional Learning and Leadership Coordinator, Sabreena's focus included Australian Curriculum implementation, and consulting on school improvement. Her most recent role was School Planning and Performance Advisor in the Department of Education and Communities High Performance unit developing online solutions for effective school planning.

Ms Evelyn Terry

School Academic Support Services, Qld

Evelyn Terry is a speech-language pathologist with over 25 years of experience in delivering speech therapy within an educational context. Evelyn has worked as a speech-language pathologist, the Speech-Pathologist-in-Charge

of North Western Region for Education Queensland and as a Supervising Clinician at the University of Queensland Phonological Awareness for Literacy clinic. Currently, as the Director of School Academic Support Services, Evelyn has presented at state, national and international conferences. Evelyn's special interest is in providing workshops for teachers in the areas of early literacy and early language development. Evelyn's practitioner research has focused on the development of appropriate, effective, curriculum-based speech therapy services within education. She has recently published Phonological Awareness Teaching Modules as well as the Foundation Literacy Program. Evelyn received an Outstanding Presentation Award at EPPC 2014.

Mr Matt Thomson

Charles La Trobe P-12 College, Macleod West, Vic.

Matt Thomson is a Foundation/Grade 1 classroom teacher at Charles La Trobe P-12 College. Over the past ten years, he has also worked across all primary year levels as a generalist classroom teacher, ICT specialist and in his current role as a curriculum Leading Teacher. Mat is a participant in the Classroom of the Future project, a joint partnership with La Trobe University, Charles La Trobe College and Intel. His role within this project has been to research the effective use of technologies to support contemporary learning and teaching with his class.

Professor Jim Tognolini

Pearson Assessment Centre

Professor Jim Tognolini is Distinguished Research Scientist for Pearson Assessment Centre. He is a Professorial Fellow at Wollongong University (Australia) and Adjunct Professor of Education at the University of Western Australia.

Ms Kristin Vonney

Flinders Centre for Science Education in the 21st Century, Flinders University, SA

Kristin Vonney is a public high school Mathematics and Science teacher who currently works at Flinders Centre for Science Education in the 21st Century (Science 21). One of the main aims of the centre is to investigate the science of learning, by using evidence from research to inform teaching practice in the classroom. She works with a range of sites from primary to high schools, to develop curriculum that will enable students to improve their executive functions or 'Stop and Think' skills, as well as their reasoning and problem solving abilities.



Mr Roger Wander

Melbourne Graduate School of Education, Vic.

Roger Wander taught secondary Mathematics in schools in Melbourne, Adelaide and Minnesota USA from 1975 to 2007. His Master of Education studies at the University of Melbourne led him to the Mathematics Education group at Melbourne Graduate School of Education as a Senior Research Officer in the Texas Instruments-sponsored New Technologies for Teaching Mathematics project, which investigated the use of TI-Nspire CAS (Computer Algebra Systems) in middle secondary classrooms. His most recent research was with the Teachers' Statistical Literacy project, the focus of an EPPC presentation in 2014. He has also presented numerous workshops and professional development sessions for Mathematics teachers. Roger is currently a Clinical Specialist for the MTeach course, working with teacher candidates in both primary and secondary schools. He is also a National Trainer in TI's Teachers Teaching with Technology group.

Mr Troy Welfare

Flinders View Primary School, Port Augusta, SA

Troy Welfare is a focus teacher in the Empowering Local Learners Project for the Port Augusta/Quorn partnership. With a strong involvement in the program since 2014, Troy has collaboratively worked with Flinders University staff, colleagues and his primary class. Troy's change in practice has demonstrated a shift in his students' PAT Maths results, engagement, problem solving and reasoning skills. Taking on the role as a focus teacher has enabled him to develop a deeper understanding of Mathematics and the executive functions to further develop his planning for learning through questioning and open-ended tasks.

Mr Andrew Wheaton

Anglican Church Grammar School, Brisbane, Qld

Andrew Wheaton is currently the Deputy Headmaster (Academic) at the Anglican Church Grammar (Churchie).

Ms Emily White

Charles La Trobe P-12 College, Macleod West, Vic.

Emily White is a Foundation/Grade 1 teacher at Charles La Trobe P-12 College. She has taught Prep to Grade 4 in a range of learning environments throughout her career. Emily is a participant in the Classroom of the Future project, a joint partnership with La Trobe University, Charles La Trobe College and Intel. Her role within this project has been to research the effective use of technologies to support contemporary learning and teaching with her class.

Mr Jo Ben Whittenburg

The Willows Community School, California, USA

Jo Ben Whittenburg currently serves as Research and Continuing Education Coordinator and teaches in the Lower School at The Willows. He is an integral member of the school's professional development team and coordinates faculty Learning Lunches, where teachers design and discuss classroom-based research to refine their teaching practice.

Bianca Witney

Catholic Schools Office, Broken Bay, NSW

Bianca Witney is an Educational Officer, Numeracy, at the Catholic Schools Office in the Diocese of Broken Bay. She has a Master of Education, Mathematics, and a Master of Theology. Before working at the Catholic Schools Office, Bianca was a primary classroom teacher. Bianca is an Extending Mathematical Understanding (EMU) Intervention Program Professional Learning Leader, awarded by the Australian Catholic University.

Ms Amy Woodgate

Somerville House, South Brisbane, Qld

Amy has a depth of experience in Primary teaching as well as presenting to peers on curriculum issues. Since graduating in 2003 with a Bachelor of Education (Early Childhood)/ Bachelor of Applied Science (Ecology), Amy has worked within the independent school sector as an early years teacher, in both single-sex boys and single-sex girls schools, and is currently employed as an Assistant Head of Junior School – Teaching and Learning. She has been actively involved in school-based projects such as monitoring students' learning, the development of appropriately targeted levels of intervention, the implementation of specific learning programs and the review of reporting and assessment practices. Her areas of interest are ongoing and authentic assessment, engaging students in their learning and supporting teachers to provide creative, engaging and differentiated learning experiences for their students.

Mrs Sue Woolfenden

Catholic Education Diocese of Parramatta, NSW

Sue Woolfenden is a Leading Teacher with the Diverse Learning Needs team at Catholic Education Diocese of Parramatta. She has over thirty years' experience as a teacher and leader of learning. Sue has worked with students with diverse learning needs as a classroom teacher, specialist teacher and leader. She completed a Master of Inclusive Education at Charles Sturt University, which furthered her research interest in reading.



Ms Michaela Wright

Schools Development Group, WA

Michaela Wright is a primary school teacher with more than 25 years' experience in education. She has been a classroom teacher in all primary year levels and attained her Level Three status in 2010. She has worked as a fully-trained numeracy specialist for the past 10 years and has held roles as a curriculum leader and a numeracy consultant for Department of Education of WA. In her recent position as Teacher Development School Co-ordinator at Huntingdale Primary School, she developed professional learning for other schools in WA for the implementation of the Australian Curriculum: Mathematics. Michaela led a committee with the Schools Development Group to develop the Maths Tracker to assist teachers with making consistent judgements and monitor student progress with the Australian Curriculum: Mathematics. She is currently Deputy Principal at Armadale Primary School.

Ms Cassie Young

Mount Barker South Primary School, SA

Cassie Young, Year 6 and 7 teacher at Mount Barker South Primary School, graduated with a Bachelor of Education from Flinders University in 2005. She has worked primarily within Years 3–7 and specifically with Year 6 and 7 students for the past two years. Cassie has worked collaboratively and led colleagues to develop 'Reading for Learning' within a primary years setting; a program which explicitly teaches 'The Big 6' of reading. Within this, Cassie is responsible for teaching wave 1; a rigorous, highly quality, accelerated teaching where the aim is to extend each child's skills and knowledge.

Dr Zhihui Kou

The Chinese University of Hong Kong

Dr Zhihui Kou is a teacher of Putonghua and Chinese (Second Language), teaching courses such as Application of Linguistics in the Teaching of Chinese, Subject Curriculum and Teaching (Putonghua), Methods of Teaching Putonghua as a Subject, and Curriculum and instruction design for using Putonghua as a medium in Chinese Language Teaching (PMI) for Primary and Secondary schools in Hong Kong. Research areas include: Putonghua Education (Curriculum Design, Implementation, and Evaluation), Putonghua Teaching Methods, and Teaching Chinese as a Second Language (Curriculum Design, Teaching).

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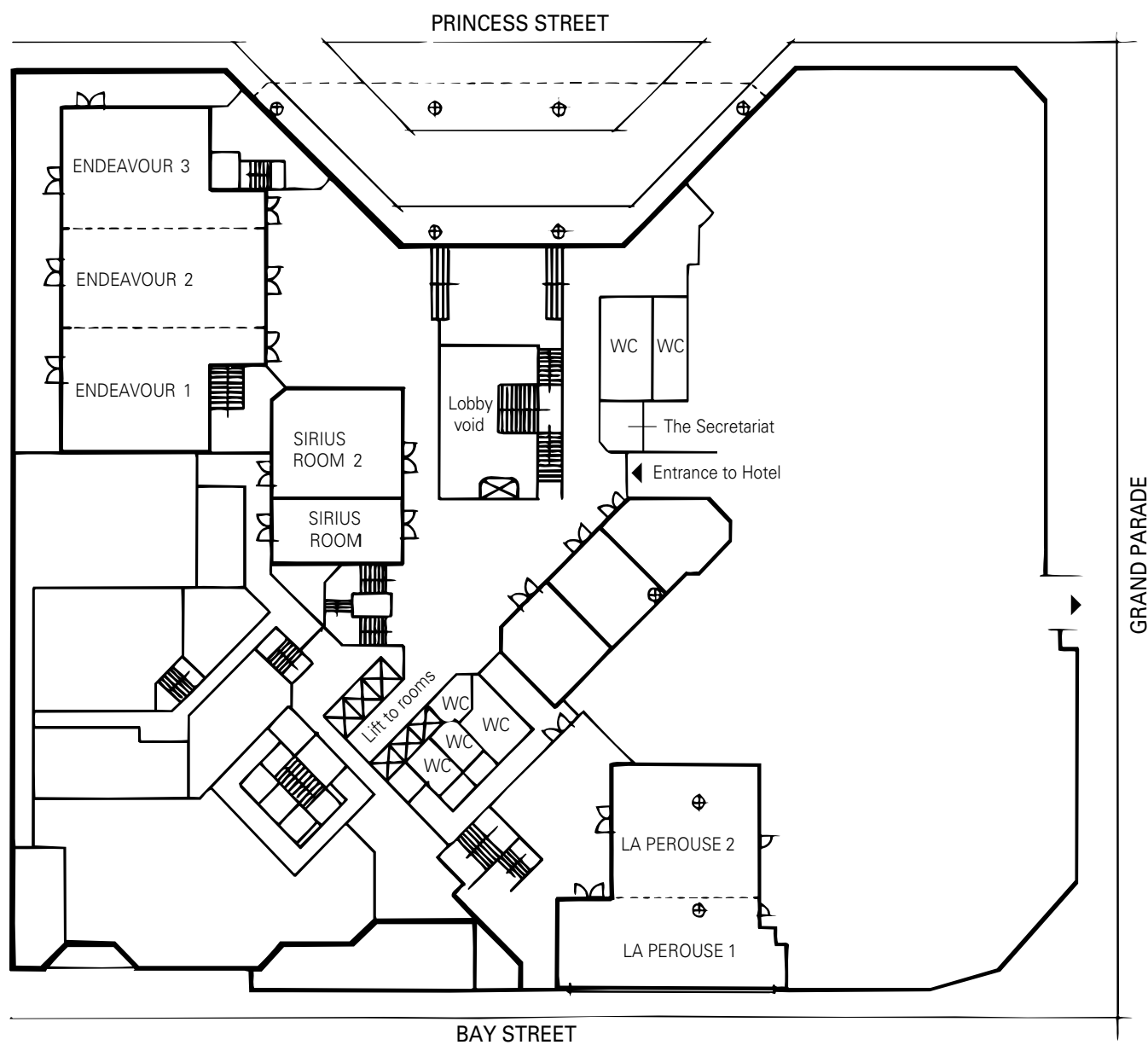
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