

Australian Council for Educational Research (ACER)

ACEReSearch

[ACER eNews Archive](#)

[ACER Archives](#)

12-2008

ACER eNews 12 December 2008

ACER

Follow this and additional works at: https://research.acer.edu.au/enews_archive



Part of the [Education Commons](#)

Recommended Citation

ACER, "ACER eNews 12 December 2008" (2008).
https://research.acer.edu.au/enews_archive/54

This Article is brought to you by the ACER Archives at ACEReSearch. It has been accepted for inclusion in ACER eNews Archive by an authorized administrator of ACEReSearch. For more information, please contact repository@acer.edu.au.

Published December 2008

In this issue:

- [Mixed results for Australia in international Mathematics and Science Study](#)
- [ACER welcomes Bradley review](#)
- [Partners in quality teaching: National curriculum and national professional teaching standards](#)
- [ACER UPDATE](#)

Mixed results for Australia in international Mathematics and Science Study

The latest results from the Trends in International Mathematics and Science Study (TIMSS) 2007 show that Australian Year 4 students have displayed some improvements in Mathematics achievement since 2003. But achievement levels of Australian students have remained static in Year 8 Mathematics and year 4 Science and declined significantly in Year 8 Science.

Results from the study involving 49 countries at Year 8 and 36 countries at Year 4 were released by the International Association for the Evaluation of Educational Achievement (IEA) in Boston on 9th December. ACER released Australia's national report at the same time.

Internationally, Asian nations lead the way with the Russian Federation and Slovenia among those making big improvements since the last administration of TIMSS in 2003.

In Australia, a nationally representative sample of around 4000 Year 4 students from 229 primary schools and 4000 Year 8 students from 228 secondary schools took part in the TIMSS assessments in late 2006.

In Year 4, Australian students performed above the international TIMSS scale average in both Mathematics and Science. At Year 8, Australian students performed above the international scale average for Science and were on par with the international scale average for Mathematics.

"These results show that, overall, Australia is doing a very good job at educating students to an average standard," said ACER's chief executive Professor Geoff Masters.

Published December 2008

“However, we need to ask ourselves, in an increasingly competitive global economy, is average good enough?”

It was noted that the proportion of Australian students achieving results at the advanced international benchmarks set for TIMSS falls well short of the numbers of students in leading Asian nations reaching the top levels. For example, at Year 4 mathematics, nine per cent of Australian students achieved the advanced international benchmark compared to 41 per cent in Singapore and 40 per cent in Hong Kong.

While Australia's TIMSS results suggest an overall maintenance of our performance over time, this is in a context where other countries, including England and the United States, have made big improvements.

Key findings from TIMSS 2007 from Australia's perspective include:

- **Year 4 mathematics** - Australian students' average scores in Year 4 mathematics have increased significantly by 17 points since 2003. In terms of relative position internationally, Australia was again outperformed by all of the Asian countries as well as England and the United States – a similar position to that obtained in 2003.
- **Year 8 mathematics** - The result for Australia is similar to 2003 but achievement scores have decreased since the first administration of TIMSS in 1995. Increases in scores achieved by students from England, the United States and Lithuania, in combination with a decrease in Australia's score, resulted in those countries significantly outperforming Australia in 2007. Overall, Australian students performed poorly in the areas of geometry and algebra.
- **Year 4 science** – Australia's performance has remained relatively unchanged since the first administration of TIMSS in 1995. Australia's relative position compared to other countries is much the same in 2007 as it was in 2003.
- **Year 8 science** - Australia's average score has declined by 12 score points since TIMSS 2003. This combined with significant improvements by the Russian Federation and Slovenia has moved Australia a little downwards in relative terms.

Published December 2008

- **Indigenous students** - Once again the results of an international study highlight that little has changed in regard to educational outcomes for Indigenous students. At Year 4 the average score for Indigenous students in both mathematics and science was around 90 score points lower than that of their non-Indigenous counterparts. This gap has actually increased over time. Similar results were found at Year 8.
- **Gender** – In Australia, boys generally outperformed girls at both Mathematics and Science at each year level. This is in contrast to the international trend for girls to outperform boys.

Professor Masters called for urgent reform of primary and junior secondary science curriculum and teaching in light of the findings.

“At primary school level we need to find ways to increase the amount of science expertise available in schools, increase the small amount of time given to the teaching of science and implement curricula that enable classroom teachers to highlight the science of the phenomena that students encounter in their lives,” Professor Masters said.

“There are issues in junior secondary science, particularly in the areas of physics and chemistry, which are highlighted by the poor average performance of Australian students.

“Attention to the teaching of mathematics in the junior secondary years also deserves attention, particularly in the areas of algebra and geometry where Australian students performed quite poorly.”

TIMSS 2007 is the fourth in a cycle of internationally comparative assessments conducted under the aegis of the International Association for the Evaluation of Educational Achievement (IEA). Carried out every four years, TIMSS provides data about trends in mathematics and science achievement over time. In Australia, TIMSS is part of MCEETYA's National Assessment Program.

The report, (*TIMSS 2007: Taking a closer look at mathematics and science in Australia* by Sue Thomson, Nicole Wernert, Catherine Underwood and Marina Nicholas), is available for download from the [ACER website](#).

Published December 2008

ACER welcomes Bradley review

The Australian Council for Educational Research welcomes the release of the Bradley Review of Higher Education.

The independent review of Australia's higher education system supports a range of recommendations made by ACER, including the need for policy and reform to be solidly underpinned by evidence-based research.

In particular, [ACER's submission](#) called for an enhanced focus on how students engage in university learning, a recommendation that has been endorsed strongly by the Review.

The urgent need for an enhanced focus on student engagement is evidenced by findings from the ACER-led [Australasian Survey of Student Engagement \(AUSSE\)](#) – the largest cross-institutional survey of currently enrolled students yet undertaken in Australian higher education.

This survey has shown, for instance, that Australian students are less engaged with their university studies than students in the US. Students' levels of contact with staff and the quality of student-staff interactions are particularly low.

The AUSSE also found that staff perceptions of student satisfaction are overly optimistic. University staff surveyed estimated that around 10 per cent of students would leave their current institution before course completing; but more than 30 per cent of students said they planned to do so.

Importantly, the AUSSE findings and a series of continuous improvement guides suggest ways to improve student engagement, verifying that students are more satisfied, perform better academically and are less likely to drop out when high standards are set and they are provided with integrated support to help them succeed.

According to the AUSSE Director, Dr Hamish Coates, the results of the survey clearly suggest the steps that could be taken to improve student engagement and educational quality.

Published December 2008

“The results suggest that students feel their educational experience has been most valuable when they are challenged to learn in a supportive environment and have encountered work-relevant learning experiences,” Dr Coates said.

“Students are much less likely to depart before completing their course and more likely to have better learning outcomes if their institution offers challenging and stimulating courses and provides appropriate, individually-targeted student support. Participating in broader enriching experiences really count for high-quality learning and development outcomes.”

While the 2008 AUSSE results show that instances of student interaction with staff and of active learning have increased in the past year, there is still considerable room for improvement, and ACER welcomes the Bradley Review as an important step in this process.

AUSSE reports and resources can be found at www.acer.edu.au/ausse

ACER's Submission to the Bradley Review is available from the Review of [Australian Higher Education website](#).

Published December 2008

Partners in quality teaching: National curriculum and national professional teaching standards

We're currently seeing two significant developments in education at the national level – one in the curriculum, with the creation of the Australian Curriculum, Assessment and Reporting Authority (ACARA) and the other in teaching standards, with the Council of Australian Governments (COAG) National Partnership on Quality Teaching (NPTQ).

The success of each will depend in large part on the success of the other. It's time to give attention to ensuring that these developments will be connected and mutually reinforcing.

A Communiqué emerging from the recent COAG meeting (29th of November 2008) indicated that the National Partnership for Teacher Quality will seek to facilitate reforms that will create a rigorous national certification system to recognise the contribution and expertise of advanced or accomplished teachers. These reforms are consistent with proposals recently put forward by the Business Council and both the AEU and the AIEU.

This reform has great potential to enhance the quality of the curriculum that students experience. Curriculum standards and standards for teaching go hand-in-hand (although a full set of teaching standards will include other aspects of teachers' work as well). National curriculum statements have important implications for what teachers should know and be able to do; that is, for writers of teaching standards. However, successful implementation of a national curriculum will depend fundamentally on the capacity of teachers to meet those standards.

Widespread and effective implementation of national curricula will require a radical overhaul of the professional learning system for teachers. A certification system linked to teacher remuneration and career progression could provide strong incentives for all teachers to show how they implement the national curriculum goals in their school context.

Published December 2008

National curriculum standards will reinforce the need for subject- and level-specific standards for beginning teachers and for accomplished teaching. The recently national curriculum statements for English, history, mathematics and science, for example, have important implications for what teachers in these fields should know and be able to do; that is, for writers of teaching standards.

Each of the NCB Framing Papers presents a strong case to justify inclusion of their subject area in the school curriculum. Each articulates what is unique about the contribution their subject makes to students' experience and understanding of the world.

It seems appropriate, therefore, to ensure that teaching standards also reflect what is unique, as well as what is common, about what, for example, accomplished English, history, mathematics and science teachers know and do. It makes little sense to have distinct curricula for English, history, mathematics and science, but generic standards for those who teach these subjects.

Agencies responsible for national curriculum and professional teaching standards have distinct but complementary roles. It will be important to clearly differentiate the functions of a national body responsible for teaching standards and professional certification from those of the NCB.

Describing what students should have the opportunity to learn as part of their schooling and what counts as quality learning is properly the role of an agency such as the National Curriculum Board.

However, describing what teachers need to know and be able to do to promote that learning in the various specialist fields that comprise the teaching profession is a role that is best delegated to accomplished teachers, their professional associations and researchers who work in those fields. While the role of a National Curriculum Board is to describe what should be taught, the role of the profession is to draw out the implications of curriculum statements for what teachers should know and be able to do for purposes such as registration and advanced professional certification.

Recent statements from the National Curriculum Board will require a clear strategy whereby they will link to, and have an impact on, practice in schools. What strategies have we used in the past?

Published December 2008

In the heyday of grand curriculum reform in the 1960s and 70s, little was understood about the problems of implementation. It was assumed that good ideas were sufficient in themselves to make their own way into classrooms. They rarely did. The 1990s were the era of “systemic reform”, based on an assumption that aligning curriculum with national testing and school accountability would work. But mostly it did not. Evidence suggests that this strategy often led instead to teaching practices that were distortions or travesties of good curriculum intentions.

To be successful, the National Curriculum Board will need a parallel national body with responsibility for providing professional recognition to teachers who provide high quality opportunities for students to learn the curriculum embodied in the NCB documents. A professional certification system would provide incentives for all teachers to show how they are implementing the national curriculum in their school context.

In other words, the success of a national curriculum will depend on building a strong partnership with teachers’ professional associations as they develop and refine their standards and as they build a system for providing professional certification.

How should such a body be created and what form should it take?

One way forward might be to reconstitute Teaching Australia so that it embraces all stakeholders and focuses on providing a rigorous certification system. This would need to be conducted in close collaboration with unions, governments and other employers as they seek to build rewards for professional certification into their EB agreements and conditions for career progression.

Another way forward would be to look again at the way in which the Australian Medical Council was created in 1985 by state and federal Ministers of Health and state medical practitioner boards responsible for registration. Although Ministers created it, and ultimately are responsible for it, they delegated its accreditation and, more latterly, its certification operations to the experts, the medical practitioners, medical educators and medical researchers.

Published December 2008

This is starting to happen in the accreditation of teacher education. It now needs to happen in the certification area so that accomplished teachers and teacher leaders across Australia can have access to a nationally recognised endorsement of their expertise. Since we are moving to a national curriculum, it makes sense to move to a national system for the certification of teachers who are able to teach the various components of that curriculum.

[Dr Lawrence Ingvarson](#) is a Principal Research Fellow with ACER.

This is an abridged version of a paper to be published by the Centre for Strategic Education early in 2009.

Published December 2008

ACER UPDATE

Masters to review Queensland primary school education

Queensland Premier Anna Bligh announced on 10 December that ACER's chief executive, Professor Geoff Masters, had been appointed to review curriculum and educational standards for Queensland primary school students. Ms Bligh said in a [media statement](#) that the review would target areas of core literacy numeracy and science. Professor Masters will present preliminary findings of his review in late January with a final report to follow in April 2009.

Australasian Education Directory 2009

The 2009 edition of Australasian Education Directory is now available. The AED is a comprehensive directory of educational organisations and personnel in Australia and New Zealand revised annually. Copies of the 2009 edition can be purchased from [ACER Press online](#).

Copyright © Australian Council for Educational Research 2015

All rights reserved. Except under the conditions described in the Copyright Act 1968 of Australia and subsequent amendments, no part of this electronic publication may be reproduced, stored in retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without written permission. Please address any requests to reproduce information to communications@acer.edu.au

[Subscribe](#)

Australian Council for Educational Research
Private Bag 55, Camberwell, Victoria Australia 3124
Tel: + 61 3 9277 5555
Fax: + 61 3 9277 5500
Web: www.acer.edu.au

