



# ERIC

RESEARCH DEVELOPMENTS

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No. 17 Winter 2007

## Raising the standard in Civics and Citizenship

Getting performance pay right

The migration of rural youth  
to Australian cities

Towards a national core  
curriculum for Year 12

ACER launches  
Psychometrics Institute

Australian Council for Educational Research

ACER

# An Australian Curriculum



**Professor Geoff Masters**  
Chief Executive Officer

*Are there some things that all young Australians should be expected to learn? Are there minimum standards of reading, writing and numeracy that all children should be expected to achieve by the end of primary school? Are there some facts about Australian society and our system of government that all students should learn at some point in their schooling? Should the award of a Year 12 Certificate depend on evidence that students have met agreed standards of literacy, numeracy, ICT literacy and skills such as teamwork and the ability to plan and organise activities? Should senior school students enrolling in subjects such as Biology and Economics have guaranteed access to a body of core content in these disciplines, regardless of where they go to school?*

These are some of the questions now on the curriculum agenda in this country, pushed to the fore in an election year in which both major parties have adopted education as a priority. In this year's budget, the Australian Government announced its commitment to develop nationally consistent standards in English, mathematics, physics, chemistry, biology and Australian history for Years 11 and 12, and in English, mathematics, science and Australian history for Year 10. This announcement followed agreement by state and territory ministers of education to develop nationally consistent curricula, and Federal Labor's announcement of its policy to introduce a national curriculum across the school years and to establish a national standards body to oversee this work.

This issue of *Research Developments* summarises some of ACER's recent curriculum research. Suzanne Mellor reports on our analyses of data from a national survey of Year 6 and Year 10 Civics and Citizenship knowledge. Most students knew less than was expected of them about Australia's system of government and democratic processes, raising a question about the need for greater clarity and attention to this area of the school curriculum. Gabrielle Matters reports on our analyses of senior curricula in English, mathematics, physics, chemistry and Australian history. In some subjects, there is already a very high level of commonality across Australia, suggesting that agreement on core curriculum content in these subjects may not be difficult to achieve.

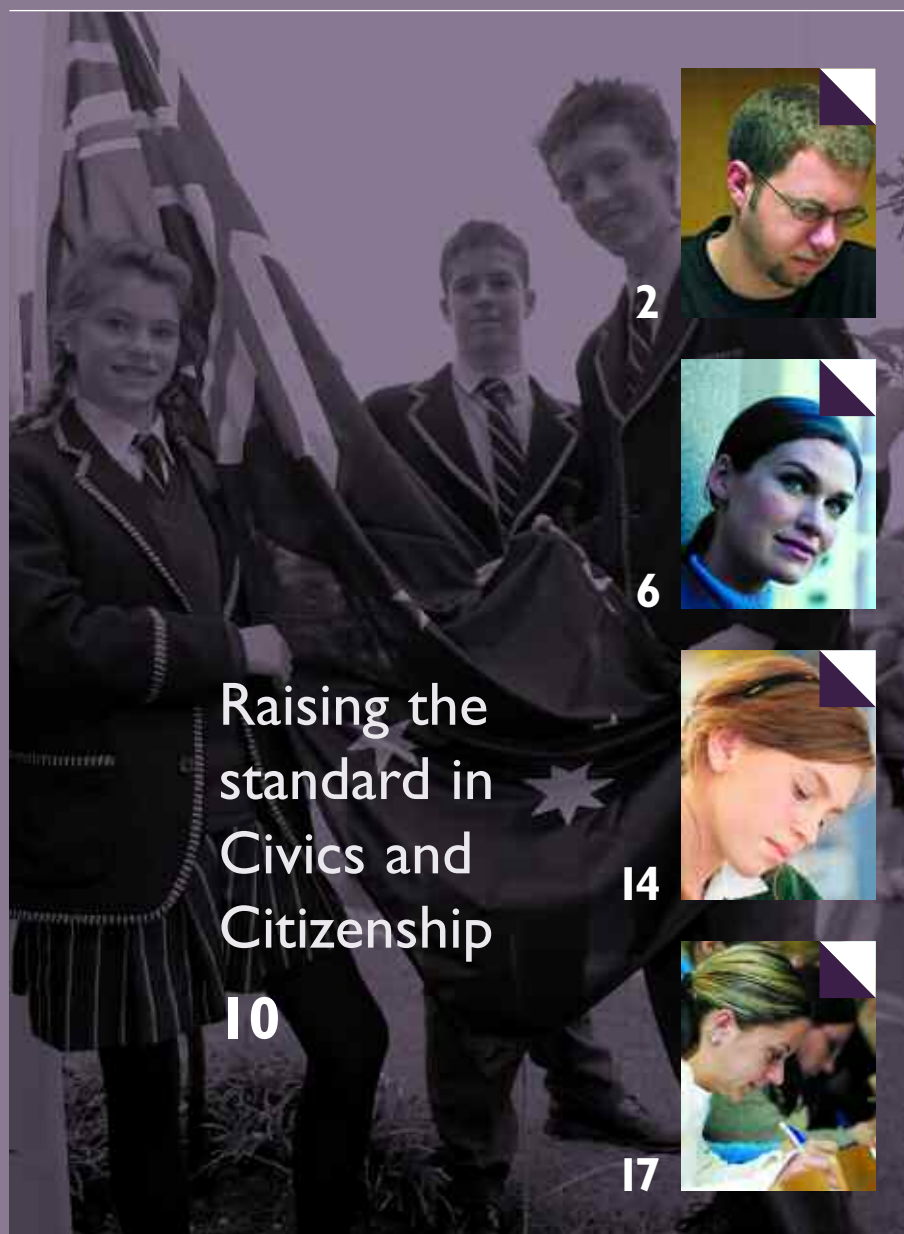
A handwritten signature in blue ink that reads "Geoff Masters". The signature is written in a cursive, flowing style.

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These photos by Guy Lavoipierre

Getting



# performance pay right



**By Dr Lawrence Ingvarson**

*Lawrence is a Principal Research Fellow with ACER's Teaching and Leadership research program.*

*Performance based pay has recently swung into the political spotlight as one way to “revitalise” Australia’s teaching profession.*

**Dr Lawrence Ingvarson** reviews current pay structures in Australia and around the world, the impact of performance pay schemes already in existence, and the possibilities for performance pay.

Recognition, remuneration and reward in teaching came under extensive review in an ACER report commissioned by the Australian Department of Education, Science and Training (DEST).

The report examined current pay systems for teachers and evidence on the impact of different kinds of performance pay arrangements in Australia and several countries around the world, and looked at further investigation required of performance pay possibilities in Australia.

One of our main conclusions was that a valid and reliable scheme for assessing teacher performance must draw on several types of evidence, possibly including evidence relating to class environment, the teacher’s knowledge about the subject and how to teach it, student learning outcomes, and contributions to the school and profession.

Another was that the different past and present approaches to performance pay have different levels of support among stakeholders.

Despite the sometimes negative response to performance based pay in Australia – as witnessed by the failure of Federal, State and Territory education ministers to reach agreement on the issue at the recent MCEETYA summit – the research reviewed indicates that a suitable scheme can and must be developed for Australian teachers.

## **The situation in Australia**

When it comes to remuneration, Australia stands out among OECD nations. Australian teachers’ careers hit a plateau very quickly and at a relatively modest salary. It takes nine years on average for an Australian teacher to reach the top of the salary scale, compared with 24 years on average for teachers in OECD countries. Beyond this, prospects for access to higher salary levels are limited regardless of their teaching performance. Advancing further involves applying for leadership and administration positions, essentially forcing our ablest teachers to move out of the classroom if they wish to continue to progress in their career.

Moving up the pay scale is normally based on annual performance reviews, which are concerned with teachers fulfilling contractual obligations rather than evidence of attainment of higher standards of professional knowledge and performance. Increments are rarely withheld.

Currently salary scales and career paths send a strong message to ambitious teachers that the most important thing for them to be doing is preparing to move out of teaching and into executive positions if they wish to further their career.



### **Keeping the best teachers in the classroom**

In order to halt the exodus from the classroom and attract highly capable and motivated young people to the profession, there is growing interest among stakeholders in Australia in pay systems that provide incentives for highly accomplished teaching. ACER reviewed two broad approaches under which this has been or could be done.

The first approach, using 'merit pay' systems, which has been tried in several other countries including the United States, evaluates teachers against one another. These teachers essentially compete for a fixed pool of funds delivered in the form of a 'bonus' by school administrators. It was noted that this approach often led to staff dissatisfaction and dissension, and teachers were concerned that it eroded the collegiate and team-based nature of teaching and encouraged favouritism and cronyism.

The second approach is using knowledge- and skills-based systems that base pay increases on demonstrated improvements in teacher practice in particular; improvements that will lead to enhanced learning outcomes for students. Research suggests that schemes of this kind are more likely to lead to improved student learning than incentives in themselves. They have also received more support from teachers overall, especially when teachers played an active role in developing standards and assessment procedures, and in the assessment process itself.

The latter approach is already in practice in three Australian states, whose systems pay teachers for systematically gathered evidence of accomplished teaching performance. The Level 3 Classroom teacher in WA, Advanced Skills Teacher in SA, and Teacher of Exemplary Practice in the NT involve application to a central agency, gathering and submission of evidence in a

portfolio, and assessment of this evidence by a panel that includes assessors external to the school.

One of the major obstacles facing the implementation of performance pay systems in Australia is deciding on a way to determine how to recognise highly accomplished teaching. Nationally, Australia lacks a rigorous advanced certification system that provides teachers with clear direction as to what it is exactly that they should strive for excellence in, areas for improvement, and strong incentives for teachers to reach high standards of practice.

Having no recourse to expertise from a professional standards body also hampers attempts by individual schools to develop valid, credible teacher evaluation systems, in their quests to develop career pathways for highly accomplished teachers.

No patterns have emerged in Australia regarding the definition of highly accomplished teaching or methods for assessing teacher performance, but several promising examples of embryonic certification systems developed by mathematics and science teachers could be further developed and built upon.

Sporadic success stories around the world offer lessons in devising standards, measures, and procedures for assessment. The professional certification scheme devised by the National Board for Professional Teaching Standards in the United States, in particular, was notable for its rigour and strong support from stakeholders.

### **How to get it right**

So, what should be valued and thus assessed, and how? Who will judge performance in these areas, and by what sort of evidence? How would the system take into consideration other factors, such as the kind of school a teacher works at and the area in which it is located?

In the course of our research, we found that performance pay schemes for teachers are more likely to find success when, firstly, their guiding purpose is to give substantial and valued recognition to teachers who provide evidence of professional development to high teaching standards, which includes evidence of student learning outcomes.

Secondly, they should be based on valid (research-based) standards, which have been developed by expert teachers in their specialist field of teaching, providing long-term goals for professional development. The scheme must also include appropriately-researched reliable and valid procedures for gathering evidence which indicates whether teachers have met those standards. High-stakes decisions made within such a scheme must draw on several types and forms of evidence depending on what is being assessed, and may include portfolio submission. Active involvement in shaping standards, performance measures and assessment procedures has been shown to reduce teachers' scepticism of such schemes.

To ensure reliability, comparability, and fairness, assessment of performance procedures should be conducted by an agency external to the school. This would ensure that favouritism, one of the main bugbears of in-school performance assessment, is not in the picture.

Teachers should have adequate opportunities to acquire the knowledge and skills required to put the standards into practice.

Demonstrating that they have met the relevant standards should lead teachers to valued professional recognition, enhanced career opportunities and significant salary increases.

Reaching high standards of performance should allow teachers access to interesting, challenging and well-supported roles in schools, where they can provide leadership to improve teaching and learning.

This requires changing the way teachers' work is organised in schools and creating more differentiated roles for expert teachers in supporting school improvement.

Finally, the assessment system should convince governments and other employing authorities of its validity and reliability, as both an indication and vindication of its own success, leading to them making long-term commitments to support the system.

Evidently, any knowledge-and-skills-based system would require a major research program to develop capacity for measuring teacher knowledge and skill in order to be successfully implemented. Methods for developing teaching standards and assessing teacher performance have improved greatly over the past 15 years or so, but teacher evaluation is still a relatively new field in Australia. There is little research evidence from the Australian experience of performance pay schemes relating to their impact on teachers' attitudes to them, on professional development, practice, staff relationships, leadership and retention.

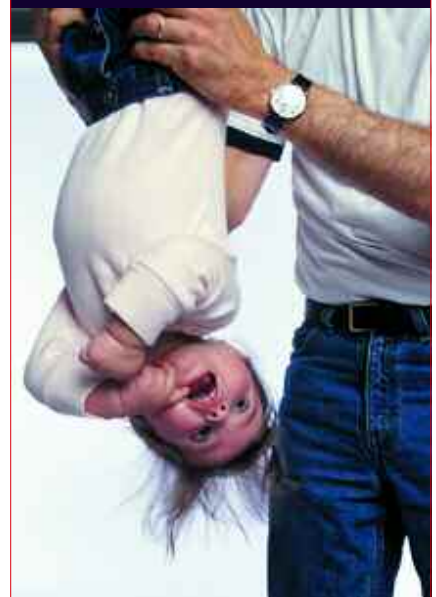
On top of the cost of development and implementation, increased expenditure in terms of providing performance pay for high-achieving teachers must also be considered when costing such a scheme.

However, there is nothing inherent in current processes for determining industrial awards and enterprise agreements that prevents the introduction of performance-based pay arrangements for teachers.

Rather than impediments, what appears to be lacking is the courage to create financially rewarding career paths based on increasing ability to teach well and promote valued student learning outcomes.

*Research on Performance Pay for Teachers*, by Lawrence Ingvarson, Elizabeth Kleinhenz and Jenny Wilkinson is available on the ACER website at [www.acer.edu.au](http://www.acer.edu.au) or from DEST at [www.dest.gov.au](http://www.dest.gov.au) ■

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# The migration





# of rural youth to Australian cities



**Kylie Hillman**

Kylie is a Research Fellow with ACER's Transitions and Economics of Education research program where she works on the Longitudinal Surveys of Australian Youth (LSAY)

*Rural communities in Australia have long felt concern about the rate at which young people leave home to head for major cities, many never to return. **Kylie Hillman** explores the extent of this problem.*

The latest results from the long-running Longitudinal Surveys of Australian Youth (LSAY), published in late February, show that more than one third of young Australians from non-metropolitan areas relocate to a major city in the years immediately after leaving school. Although some return in the years to come, non-metropolitan areas experience a net loss of a quarter of their young people.

Gathering information on which young people leave their non-metropolitan homes, why they leave and what factors influence their decisions is important to understanding what interventions, if any, are necessary to help rural communities stop the decline of their youth population and to promote community and economic growth.

The need to help policy makers and rural community leaders establish some basic facts about the migration patterns of the non-metropolitan youth population prompted the first Australian national longitudinal study of young people's geographic mobility. The report, *Movement of non-metropolitan youth towards the cities*, published in February, also saw the LSAY program reach a major milestone as it was the 50th report published in the series.

This particular study focused on a group of 5112 young people who were living in non-metropolitan areas in their final years of secondary school, and the pathways they followed in the years following secondary school, including their geographic mobility



and participation in education, training and employment. They were tracked from 1997 (when most were in Year 11) until 2004 when most were 23 years old. Areas considered to be non-metropolitan are those outside the major cities of Australia and their surrounding suburbs (Melbourne, Sydney, Adelaide, Hobart, Perth, Canberra and Brisbane).

The study had three broad aims: to investigate the post-school pathways of non-metropolitan youth; to investigate the characteristics of young people that are associated with remaining in their non-metropolitan community or, conversely, leaving the area and moving to the city; and to investigate various economic and other outcomes associated with decisions to move, remain or return.

### **The geographic mobility of young people**

Overall the information on the movements and activities of young people shows that there is a general movement from non-metropolitan areas to the major cities of Australia. Young people tend to make these geographical shifts to take up study that may not be available in their home communities or in the other non-metropolitan centres, although there are other subsequent activities – such as work and travel – in which young people engage after leaving home.

Twenty-six per cent of the study's participants who had been living in a non-metropolitan area when the study commenced in 1997 were living in a major city at the end of the study in 2004. Thirty-six per cent had experienced at least one year in a major city between 1998 and 2004. While some return to their community, rates of return migration are lower resulting in a net loss to non-

metropolitan communities of 24 per cent of young people by around age 23.

Those making a move to a major city were typically drawn by the pursuit of further study, most often at university. Over the project's seven year period, approximately 40 per cent of the non-metropolitan youth who had moved to a city were studying either at a university or a TAFE institution or were undertaking an apprenticeship or traineeship. University study was the most common reason cited for moving to a city. Fewer young people left to take up an apprenticeship or traineeship or other form of study. This finding suggests that there may be better provision of non-university forms of post-compulsory education and training in non-metropolitan areas, allowing more young people to remain in non-metropolitan communities to study while university-bound students have a greater need to leave.

The study looked at a number of background variables to determine how they may influence a young person's decision to either relocate to a city or remain in a non-metropolitan area. Background characteristics; school-related variables; post-school activities; geographic mobility; and outcomes were all considered. Most of these variables had a small influence. However, those with full-time employment in their non-metropolitan homes were more likely to stay there. Full-time employment also worked to keep young people in the city after completing their studies. There was also some indication that young men and women who were originally located in areas that were less accessible were also more likely to relocate. Having a parent with a tertiary qualification increased the likelihood of moving to a city for young men only.

### **Economic and social outcomes**

Having identified which young people leave non-metropolitan areas and why, the study then turned to examining a number of social, financial and occupational outcomes at age 23. The study's participants were divided into three categories. Those who remained in a non-metropolitan location for all eight years were considered 'Stayers'. Those who moved to a major city at some point between 1997 and 2004 and remained there (or in another city) were considered 'Leavers;' and those young people who moved to a major city but then returned at some point to a non-metropolitan area were considered 'Returners.'

Of the financial and occupational outcomes investigated, there were no statistically significant differences in the levels of employment, the average gross weekly income or the average number of hours worked per week by young people in the 'Stayer', 'Returner' or 'Leaver' groups. The general and career satisfaction levels of young people in the three groups were very similar.

In terms of social outcomes investigated, there were no differences in the rates of marriage across the groups, while a smaller proportion of 'Leavers', compared to those in the 'Stayer' and 'Returner' groups, had become parents. Unsurprisingly, fewer young people in the 'Leaver' group were still living with their parents at age 23, while a greater proportion of 'Stayers' were still in the family home at the same age.



## Conclusions

Non-metropolitan youth are likely to continue to leave their homes to pursue university study as non-metropolitan communities cannot offer the same opportunities for university study that are available in the major cities. However, the economic and social outcomes experienced by the three groups suggest that there may be some advantages to young people in returning to a non-metropolitan area once they have completed their studies. Rates of employment, average income and work hours were similar for both 'Leavers' and 'Returners.' Home ownership was slightly higher among those who had chosen to remain in non-metropolitan areas. Rural communities therefore have a challenge ahead of them to convince their young people to return after completing their education in the cities. ■

## More information

Further information and additional findings are available in the report, *The movement of non-metropolitan youth towards the cities* by Kylie Hillman and Sheldon Rothman. The study is research report number 50 in the Longitudinal Surveys of Australian Youth (LSAY), a program conducted jointly by ACER and the Australian Government Department of Education, Science and Training (DEST). This and other reports from the LSAY series can be downloaded from the ACER website at [www.acer.edu.au](http://www.acer.edu.au)



**The Centre for the Economics of Education and Training (CEET) is a joint venture of Monash University's Faculty of Education and Faculty of Business and Economics and the Australian Council for Educational Research (ACER).**

CEET undertakes research, research training, consultancies and dissemination on the economics and finance of education and training. It is the only centre for the economics of education and training in Australia.

## CEET Working Paper 65

*CEET Working Paper 65* by Chandra Shah and Mike Long looks at policies, programs and measures that encourage the mutual recognition of qualifications and cross border mobility. It describes developments in the EU and in Australia and New Zealand.

Labour mobility and mutual recognition of skills and qualifications: European Union and Australia/New Zealand is available on the CEET website

[www.education.monash.edu.au/centres/ceet/](http://www.education.monash.edu.au/centres/ceet/)

## 50th LSAY report

The LSAY program has reached a significant milestone with *The movement of non-metropolitan youth towards the cities* being the 50th report published in the series.

Since 1996 LSAY reports have examined issues including school achievement and school completion; participation in vocational and university education; gaining and maintaining employment; and household and family formation. More detailed investigations have examined links between social characteristics, education and training, and employment.

Over the coming months LSAY reports will be published focusing on university completion, vocational education and training, career advice in schools, early school leavers, and young people's occupations and earnings. These forthcoming reports will further add to the knowledge base on transitions of young Australians from school to further study and work.



Raising the standard



# in Civics and Citizenship



**Suzanne Mellor**

Suzanne is a Senior Research Fellow with ACER. She is ACER's Project Director of the MCEETYA National Assessment Project-Civics and Citizenship

*The results of Australia's first national Civics and Citizenship Assessment program revealed surprising gaps in students' knowledge of key historical events and concepts of democracy and citizenship. **Suzanne Mellor** describes the assessment and suggests that more targeted teaching of civics and citizenship is required.*

In December 2006 the results from the *National Assessment Program – Civics and Citizenship* for years 6 and 10, prepared by ACER for the Ministerial Council on Education, Employment, Training, and Youth Affairs (MCEETYA), was released into a storm of media controversy when it was revealed most students could not answer questions about key democratic events in Australian history. Further, while students seemed to appreciate their democracy, their level of knowledge and understanding of civics and citizenship was considerably less than was expected by practitioner experts who contributed to the study.

The findings from the assessment, described and analysed in the project report, demonstrates to us that Australia has an urgent need for formal education in civics and citizenship if primary and secondary students are to increase their civics knowledge and understanding and improve their citizenship dispositions regarding participation in their civil society.

## **Implementing the study**

ACER was contracted by MCEETYA to undertake the inaugural assessment of a national sample of more than 20,000 Australian Year 6 and Year 10 students. Work on the assessment got underway in 2003 with the development, trial and revision of assessment instruments. The assessment itself was conducted in October 2004. It involved 10,712 Year 6 students from 318 schools and 9,536 Year 10 students from 249 schools. The assessment comprised multiple-choice and open-ended response questions on concepts such as the rationale for the citizenship pledge, social responsibility, basic historical and political facts and the impact of influencing factors such as the media on democracy. The results obtained provide baseline data for future studies including the next round of testing for the National Assessment Program taking place this year.

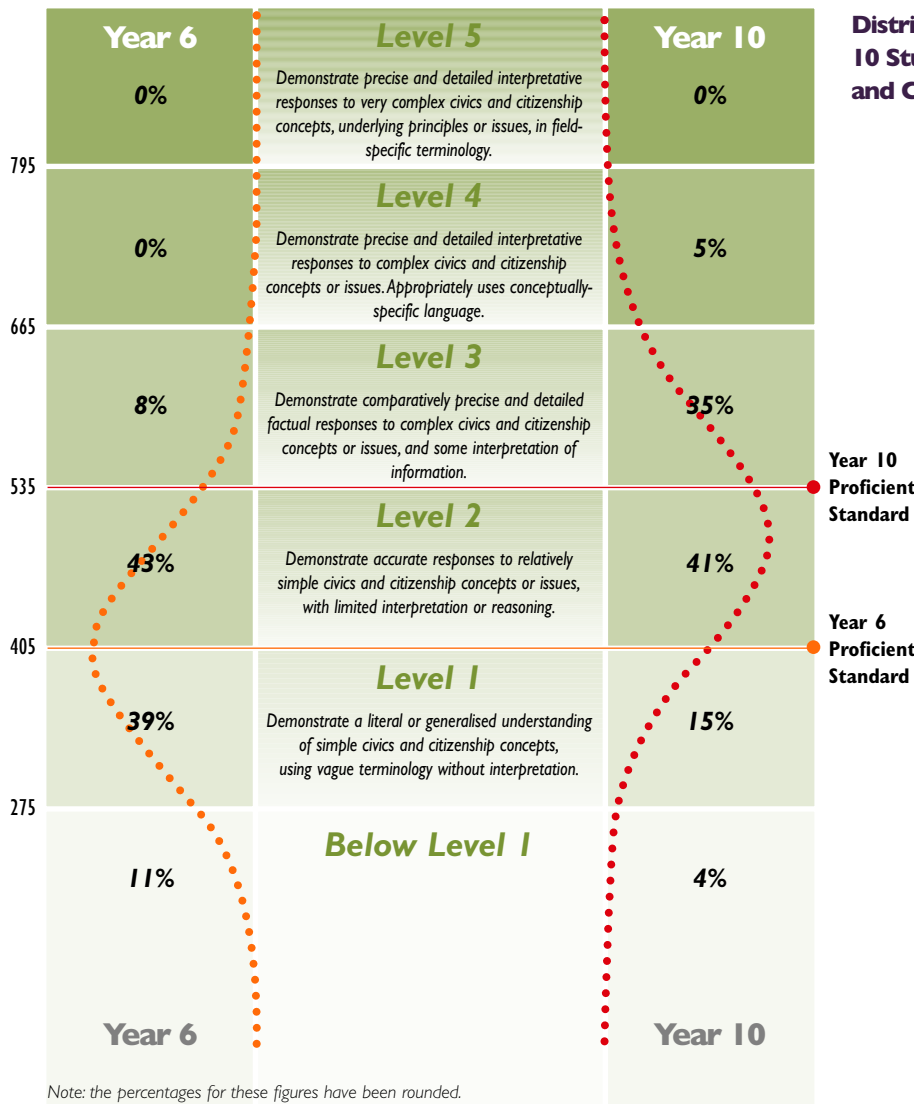
In order to measure student progress MCEETYA commissioned the development of an assessment domain, which incorporated two Key Performance Measures (KPMs) for civics and citizenship

education. *KPM 1* focused on knowledge and understanding of civic institutions and processes while *KPM 2* addressed citizenship dispositions and skills for participation. Test items were constructed to map across the whole of the Assessment Domain.

Once the data was analysed, a scale or continuum was developed to describe students' proficiency in Civics and Citizenship. It was divided into five proficiency levels, ranging from '1' (containing the least difficult items) to '5' (containing the most difficult items). To establish the levels, a combination of experts' knowledge of the skills required to answer each item and information from the analysis of students' responses was used. The scale makes it possible to show what students in Year 6 and 10 knew, understood and could do in relation to the concepts, knowledge and dispositions outlined in the Civics and Citizenship Sample Assessment Domain for 2004.

Civics and Citizenship education experts from government, Catholic and non-government schools in all states and territories came together to set a proficient

## Distribution of Years 6 and 10 Students on the Civics and Citizenship Scale



standard for each of Year 6 and Year 10. This proficient standard was a level of performance that would be expected for a student at that year level. To reach the proficient standard students needed to demonstrate more than minimal or elementary skills. The proficiency standard for Year 6 was set at Proficiency Level 2 and for Year 10 at Proficiency Level 3.

### Outcomes from the study

What did the assessment show us about the level of understanding Australian students have about civics and citizenship? The results of the assessment revealed substantial gaps in students' knowledge and understanding of the key concepts tested. Only half of Year 6 students and 39 per cent of Year 10 students met the defined proficiency standards for their year level. The findings were met with horror by the national media and prompted vigorous debate about how this could have happened.

The Civics and Citizenship Assessment report provides details about the administration and the substance of the assessment. A wide range of the items are revealed and analysed by proficiency level, with student responses included. It identifies the concepts and understandings with which students appeared to have the greatest difficulty. They were of two types.

- Concepts such as 'the common good' and
- Key information about so-called 'iconic knowledge' about national events and nationally-representative symbols.

Students lacked knowledge of key facts and context about national events and nationally-representative symbols such as Australia Day, ANZAC Day and the role of the Governor-General. They also struggled with the concept of 'the common good' – and were unable to deal with strategies that refer to how individuals can influence civic institutions for the benefit of society. They didn't understand it, didn't believe in it, or couldn't see how they could exercise it.

Among the findings that particularly surprised researchers, one involved items about Australia Day. An open-ended question asked students to describe the event that is remembered on Australia Day. An accepted response required students to refer to the start of British settlement in Australia: for example, 'When the First Fleet arrived,' or 'The English coming to Australia.' Researchers found that only 16 per cent of Year 6 students and 23 per cent of Year 10 students were able to provide this basic fact in their responses. Further, only 17 per cent of Year 6 and 27 per cent of Year 10 students could articulate why Australia Day was sometimes called Invasion Day.

Which of the following is one of the Governor General's official responsibilities?



- to suggest new laws
- to sit on the High Court
- to swear in new Governments
- to control Australia's Government

The role of the Governor General was another stumbling block, with only seven per cent of Year 6 students and 23 per cent of Year 10 students able to correctly identify official vice regal duties. This item (see above) used a multiple-choice format. The incorrect response options described a political role rather than a ceremonial role. To get this question right students had to understand that the role of the Governor General is ceremonial rather than political. With just seven per cent of Year 6 students and 23 per cent of Year 10 providing the correct answer, the result suggests that students are not being taught about the roles of senior office holders.

It was also clear from the results that many of the Year 10 students did not even have the knowledge outlined in the assessment domain as being expected of Year 6 students, especially in relation to information about the constitutional and civic structures and processes of Australian democracy.



Despite the generally low levels of achievement being demonstrated by many students at both year levels, it also must be noted that some students were able to achieve at much higher levels than had been expected. Eight per cent of Year 6 students were able to perform at Level 3 – that is the level above that expected of Year 10 students - and 5 per cent of Year 10 students were able to achieve at Level 4. These students displayed specific knowledge and provided complex responses to a range of question types, about many aspects of civics and citizenship. Their results are the most positive outcome of the study. They clearly indicate that the concepts are not too difficult for students. It is simply that most students have not been made acquainted with the cognitive or dispositional concepts outlined in the assessment domain. They have not been introduced to those concepts by their schools, their parents or their society generally.

There was some indication that a student's background and level of interest in politics and social issues affected their performance on the assessment. The study included a student survey used to gather information on student background such as gender, Indigenous status, language background, geographic location and socioeconomic status. The greatest influence on student achievement was the occupation of parents, with the children of professionals performing best on the assessments.

There was also some advantage accrued to taking an interest in politics and social issues outside of school. Those Year 10 students who more frequently reported that they talked about politics and social issues tended to score higher than their peers. Likewise, Year 6 students who more frequently read about current events in the newspapers did better than other Year 6 students.

This finding suggests that students who participate in such activities out of school become familiar with civics and citizenship processes.

### Conclusions

On the surface the results of this study are disappointing. A majority of the Year 10 and half of the Year 6 students did not meet the proficiency standards expected of them by the experts. It was believed by the researchers and jurisdictional experts that key information about national events and nationally representative symbols, had been 'taught to death' in Australian schools, as part of history and social education classes, and general knowledge. This appears to be not the case.

While the researchers and the experts from state and territory education authorities were somewhat surprised and disappointed at the results, they recognised that students could not have been expected to achieve the defined proficiency standard if they have not had sufficient formal, consistent curricular instruction in civics and citizenship.

Evidence that students are not receiving sufficient targeted teaching of this information can be found in the project report. Markers and experts noted that many lower performing students could select the correct answer in a multiple-choice question or were able to respond to an open-ended question only by using terminology that was minimal or somewhat vague. Their language was imprecise and generalised. Because they had not been taught the language specific to the concepts and understandings of the field, they floundered in attempting to explain their partly-formed ideas. This lack of specific and precise language with which to express the required levels of response is a sign of the low incidence of formal instruction in this curriculum area.

The Adelaide Declaration insists that Australian students need to develop a sound understanding of how Australia's government and democracy work in order to participate fully as citizens in their society and that it is school business to achieve this outcome. The results of this national assessment clearly indicate there is a need for a greater emphasis on civics and citizenship education in Australian schools. Formal consistent instruction in civics and citizenship has not been the experience of Australian students since the 1950s. Prior to 2004, there was very little in the way of formal Civics and Citizenship curricula being implemented in Australian primary and secondary schools but it appears that some students had received some instruction in some of the civics and citizenship concepts. To see improvement in future assessment programs there needs to be more consistent instruction in civics and citizenship by way of an appropriate curriculum, accompanied by professional development for teachers. By 2007 more formal curricular structures in civics and citizenship have been developed and implemented in all educational jurisdictions.

ACER is currently conducting the second cycle of the MCEETYA National Assessment Program - Civics and Citizenship 2007. The 2007 assessment involves a sample of around 14,000 students at Year 6 and Year 10 levels in over 600 schools. When results from the 2007 assessment are collected and analysed it will be possible to compare the 2007 results with those from 2004. ■

### Further information

The *National Assessment Program – Civics and Citizenship, Years 6 and 10* report, published by MCEETYA is available online from [www.mceetya.edu.au](http://www.mceetya.edu.au)

Towards a





# national core curriculum for Year 12



**Professor Gabrielle Matters**

Gabrielle is a Principal Research Fellow and General Manager of ACER's Brisbane office

In February this year Federal Education Minister Julie Bishop released the report, *Year 12 Curriculum Content and Achievement Standards*, prepared by ACER. This provides a strong case for a common curriculum core in at least some senior school subjects after a review of curricula found there is already a high degree of consistency in what is being taught, as **Gabrielle Matters** writes.

This study, undertaken in the second half of 2006, provides the first Australia-wide picture of what is expected of students taking five subjects – English (including Literature), Mathematics, Chemistry, Physics and Australian History – in the final years of secondary school.

The study examined Year 12 curricula in all states and territories and posed three broad questions: What is currently taught in these five subjects across Australia? What is the 'essential' content that all students should be acquiring through these subjects, regardless of the state or territory in which they live? What standard of performance is expected of students in these subjects, and how do these expectations vary across states and territories?

## Existing similarities

The degree of curriculum consistency varies from subject to subject across Australia. Consistency is highest in Physics, Chemistry and Advanced Mathematics and lower in English and Australian History.

It was estimated that 90 per cent of the content of Advanced Mathematics courses, 85 per cent of the content of Physics courses, and 95 per cent of the content of Chemistry courses in the senior school curriculum was common across all Australian states and territories.

The same high level of consistency was not evident in Australian History and English courses. There are more than twenty different TER Australian History courses and 18 TER English courses offered across Australia. It is not possible to identify specific topics in History courses while commonality in English courses can be found in the study of text types such as poetry. However, there was significant agreement on the kinds of skills students should develop in Australian History courses and the general types of texts that should be studied in English courses.

## Essential content

Opinions were sought from a range of experts on what *should* be taught in these five senior subjects. Experts were asked to review and rate the importance of current curriculum content and to identify other content that they considered important but missing from current curricula.

A high level of consistency in what subject experts considered 'essential' curriculum content was found for Physics, Chemistry and Advanced Mathematics. Most were already included in the curriculum in all states and territories. There were a few examples of essential content absent from curricula in some jurisdictions (see below).

### Topics that subject experts considered 'essential' but that are not currently included in all state/territory syllabuses are:

- |                   |  |
|-------------------|--|
| <b>Physics:</b>   | static electricity and electronics                             |
| <b>Chemistry:</b> | analytical techniques<br>gases in the atmosphere               |
| <b>Adv Maths:</b> | the binomial theorem*<br>logic proof*<br>sequences and series* |

\* these topics sometimes are covered in other senior mathematics courses

Reviewers were less inclined to identify specific topics as 'essential' for all students to study in Australian History and English. There is no history topic that all reviewers considered essential to the senior curriculum. The topics considered most important were: The Nature and Impact of Immigration, Foreign Policy and Changing Relations, and The Social and Economic Impact of World War I. In English, Prose Fiction was judged to be most essential, followed by Contemporary Literature.



## Achievement standards

The study also considered the standards of achievement expected of students in each state and territory through an inspection of readily available assessment materials.

While it was possible in most subjects to identify the kinds of achievements that states and territories value and assess (ie, what students are expected to be able to do), it was not possible to draw conclusions about relative performance expectations (ie, how well students are expected to do these things). For example, it was not possible to judge whether an 'A' in Chemistry in Western Australia represents a higher or lower level of achievement than a 'VHA' in Chemistry in Queensland.

Part of the reason for this is that the Australian states and territories use different terms to describe achievement expectations. Terms such as 'advanced', 'extensive' and 'outstanding' may have unambiguous meanings within particular jurisdictions, but these meanings are not shared across Australia.

## Moving forward

This study showed that there is already a high degree of consistency in course content across the country in key subjects, increasing the feasibility of a common curriculum, at least in Physics, Chemistry and Advanced Mathematics.

Based on these findings, it is difficult to justify the continued development of essentially the same syllabus in these key subjects seven times across Australia, the use of seven different ways of examining this syllabus and seven different formats for reporting student results.

The report, therefore, calls for the establishment of a common curriculum 'core' in each of the key subjects to be expressed in terms of subject matter and skills, together with national standards for

assessment to provide comparable student results across the country (see text box). National examinations in Chemistry, Physics and Advanced Mathematics would provide results that could be compared across Australia for the first time.

Since the release of the study there has been increasing interest in the concept of a common curriculum. Both the Australian Government and federal opposition have announced intentions to pursue a national curriculum in some subjects. Employer groups such as the Australian Chamber of Commerce and Industry (ACCI) have echoed calls for greater consistency in curriculum and the reporting of results so that employers can easily compare the standards achieved by prospective employees.

It should be a relatively straightforward matter to reach agreement on national curriculum consistency in senior subjects such as Chemistry, Physics and Advanced Mathematics. It may also be possible to achieve national agreement on common standards and methods of reporting student results, and agreement on some common assessments and examinations. And, in doing so, it would be vital to agree on a common language to describe curriculum and assessment (including moderation) and a common nomenclature for reporting results on certificates.

ACER welcomes the debate taking place on national curriculum and curriculum reform in general. ACER will continue to take a leading role in the debate and push for bold national responses on curriculum issues. ■

## Further information:

The report, *Year 12 Curriculum Content and Achievement Standards*, by Gabrielle Matters and Geoff Masters is available on the DEST website at

<http://www.dest.gov.au/schools/year12study>

## A curriculum core

Curriculum 'core' in a subject could be expressed in terms of subject matter (eg, topics, text types, big ideas and concepts) and skills (both subject-specific and generic). It should:

- ensure sustained engagement with central concepts and principles in order to develop deep understanding;
- relate these central concepts to the world that students understand;
- express central concepts in language that is familiar to students;
- be developed to minimise overlap or duplication of core content across subjects;
- ensure the integration of academic content with the teaching and learning of higher-order thinking skills (ie, not privilege generic skills over conventional knowledge categories);
- require the development of factual (or declarative) knowledge. Students must learn facts, concepts and procedures and must be able to demonstrate and apply this knowledge (eg, to problems, performances); and
- strike a balance between everyday relevance and application and more esoteric knowledge.

# ACER launches Psychometrics

## Institute

*ACER launched the Psychometrics Institute in January 2007, building on the foundations of its research into the measurement of educational achievement, ability and progress. Psychometrics forms the backbone of much of ACER's research into educational assessment, including measurement procedures, the construction of instruments, and the development of theoretical approaches to educational and psychological measurement.*



The Institute, headed by six of Australia's leading psychometricians, provides ACER with expert advice to enhance the organisation's psychometric work in five key areas by:

- ensuring ACER uses the best available methodologies and undertakes ongoing research into further development and application of these methodologies. To help achieve this, the Institute reviews and provides recommendations in relation to ACER's psychometric research and development, and its approaches to statistical analysis.
- building ACER's capacity in psychometrics and quantitative research through appointments, partnerships and development of current staff is the second area. The Institute helps facilitate this by providing relevant advice to ACER management.
- working to advance ACER's role as a provider of high-level research training through advising the organisation on the development and delivery of external training in psychometrics and quantitative research methods.
- advising ACER on ways of disseminating its psychometric research and development work, particularly through research reports, refereed journal articles and presentations at appropriate conferences and meetings.
- contributing to keeping ACER at the leading edge in developing innovative solutions in the application of technology in its measurement and research activities, by reviewing and providing advice on ACER's use of related technology, such as online assessments and surveys, computer adaptive testing, data analysis software, marking software, and computer-generated reports.

Specialist committees will be established by the Institute's Board of Directors to provide in-depth advice where required.

"ACER has established itself as a national and international centre of excellence in psychometrics and quantitative research," says the Institute's Director Dr Siek Toon Khoo, Principal Research Fellow and Senior Psychometrician at ACER.

"The Institute's aim is to help ACER enhance this reputation and continue to develop and fine-tune its psychometrics groundwork and research." ■

More information on the Psychometrics Institute is available at [www.psychometricsinstitute.edu.au](http://www.psychometricsinstitute.edu.au)



### The Board

- **Professor Raymond Adams** (Chair), independent consultant in psychometrics and educational measurement and statistics.
- **Dr John Ainley**, Deputy CEO (Research) and Research Director of National and International Surveys, ACER
- **Professor Murray Aitkin**, Professorial Fellow in the Department of Psychology, Melbourne University
- **Dr Siek Toon Khoo**, Principal Research Fellow and Senior Psychometrician, ACER
- **Professor Geoff Masters**, CEO, ACER
- **Dr Ken Rowe**, Research Director, Learning Processes, ACER.

### Re-imagining science learning



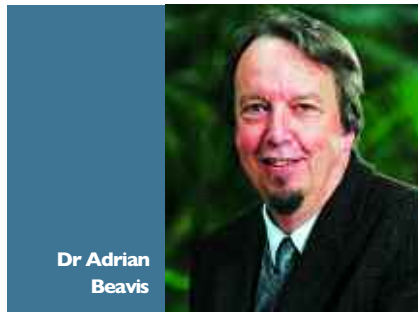
ACER's Australian Education Review 51, *Re-imagining Science Education: Engaging students in science for Australia's future*, by Deakin University Professor of Science Education Russell Tytler was released in May.

Using research presented at ACER's *Research Conference 2006, Boosting Science Learning – what will it take?* as a base for a broad and intense review of the literature, the review calls for a 're-imagined' science education that is focused not only on preparing future scientists, but also on engaging all young people in science.

"We see clear evidence that the curriculum and classroom practice are failing to excite the interest of many, if not most, young people at a time when science is a driving force behind so many developments and issues in contemporary society," Professor Tytler writes.

The review is available for download from the ACER website at [www.acer.edu.au](http://www.acer.edu.au). Print copies can be purchased from ACER Press. Contact customer service on (03) 9835 7447 or via email on [sales@acer.edu.au](mailto:sales@acer.edu.au)

### New research program focusing on policy established



Dr Adrian Beavis

ACER has established a new research program in Policy Analysis and Program Evaluation. The new research program will strengthen ACER's research into a range of education policy issues and will build its capacity to bid for and undertake work in the area of program evaluation. It will include significant capacity to address questions around the resourcing of schools, and will enhance ACER's capacity to develop policy-oriented publications on the state of Australian education. Dr Adrian Beavis has been appointed as Research Director of the new program. Dr Beavis worked with ACER for 13 years until leaving to join the Smith Family as Principal Researcher in 2006. In that role Dr Beavis was responsible for program evaluation, original research commentary on research and policy documents. He will be joined on the Policy Analysis and Program Evaluation team by Dr Michelle Lonsdale and Dr Andrew Dowling who have been appointed as Principal Research Fellows.

### ACER report on university course completion released



A new ACER report has found that, once they enter university, whether a student attended a government or independent school and their socioeconomic background make little difference to the odds of completing their course. Released in April, it investigated attrition rates from university courses, background factors that may influence attrition and the labour market consequences of non-completion.

It found that the strongest influence on course completion is the Tertiary Entrance or ENTER score gained in Year 12.

Further information and additional findings are available in the report, *Completing University: Characteristics and Outcomes of Completing and Non-completing Students* by Gary N. Marks. The study is research report number 51 in the Longitudinal Surveys of Australian Youth (LSAY), a program conducted jointly by ACER and the Australian Government Department of Education, Science and Training (DEST).

### Appointment of new research director for Teaching and Leadership

Professor Stephen Dinham will join ACER as Research Director in the Teaching and Leadership research program on 1 July 2007. He takes over the role previously held by Dr Lawrence Ingvarson, who will continue working part-time with ACER. Professor Dinham's most recent appointment was Professor of Educational Leadership and Pedagogy at the Australian Centre for Educational Leadership, University of Wollongong. He has also held senior academic roles at the University of New England, the University of Toronto and the University of Western Sydney. His main research interests include educational leadership and change, pedagogy/quality teaching, professional teaching standards, teachers' professional development and teacher satisfaction, motivation and health.

### Perth Office officially launched



ACER CEO Geoff Masters officially launched ACER's new Western Australian office in February. The office's opening establishes a permanent presence for ACER in Western Australia for the first time.

"The opening of a Perth office and the appointment of an Education Consultant for Western Australia demonstrates ACER's commitment to developing our services for Western Australian customers in schools and the private sector," Professor Masters said.

The Perth office is located at 7/1329 Hay Street West Perth, WA 6005, telephone 08 9485 2194, fax 08 9485 2195

### ACER to conduct PISA 2009

ACER has been selected to conduct the major components of the OECD's Programme for International Student Assessment (PISA) 2009. For the fourth time running, ACER leads an international consortium including cApStAn (a linguistic quality control agency in Belgium), the German National Institute for Educational Research (DIPF), an education research centre at the University of Liege (aSPe), Westat (a United States based statistical and research organisation), and NIER – the National Institute for Educational Policy Research in Japan in conducting the PISA assessment of 15-year-olds in reading literacy, mathematical literacy and scientific literacy. ACER will also develop a computer-delivered assessment.

### ATN pilots Engineering Selection Test

ACER has been commissioned to develop a test to measure the aptitude of students wishing to gain admission to university engineering courses at the Australian Technology Network (ATN) group of universities. ATNEST will assess a

candidate's ability to think scientifically, solve quantitative problems, critically analyse information and display interpersonal understanding. It will allow students who have not studied the traditional prerequisites for admission to engineering, to gain admission to engineering courses. ATNEST will also enable students who feel that their Tertiary Entrance Rank (TER) or other academic credentials are not an adequate reflection of their ability to successfully study engineering, to have their ATNEST results considered alongside their TER.

For further information phone 61 3 9277 5573 or email [atnest@acer.edu.au](mailto:atnest@acer.edu.au)

### Unicom joins ACER



ACER acquired Perth-based Unicom Education in February. Unicom offers an extensive range of special needs and speech and language resources from both Australia and overseas. ACER also welcomed Shane Thompson, who has managed the company for the past five years. Shane has been appointed as Education Sales Consultant in Western Australia.

The addition of Unicom Education's suite of products to the ACER Press range enables ACER to expand its offering in special needs resources.

### ANTRIEP

ACER has been accepted into the Asian Network of Training and Research Institutions in Educational Planning (ANTRIEP). ANTRIEP was formed in 1995 with the aim of facilitating increased interaction between a number of Asian institutions that are involved in training and research in educational planning and management, and to help them engage in cooperative activities. It is supported by the UNESCO International Institute for Educational Planning (IIEP). ACER already has close links with several ANTRIEP member institutions through other networks and looks forward to making contact with the wider network of institutions involved in ANTRIEP. For more information on ANTRIEP visit the website at <http://www.antriep.net/>

### ACER to redevelop VIC Roads Motorcycle Test



ACER has been awarded the contract for the redevelopment of the VicRoads Motorcycle Knowledge Test. This involves writing and trialing over 300 items that will be based on the Victorian Rider Handbook. The motorcyclist Training Providers will assist ACER in trialing the items. The project will be completed by July 2007.

### Australian Technology Network project

ACER has been engaged by the Australian Technology Network (ATN) group of universities to develop an academic standards model. The project will produce a model tailored for the ATN which can be used to manage, analyse and report on academic standards, and to ensure that programs are industry relevant.

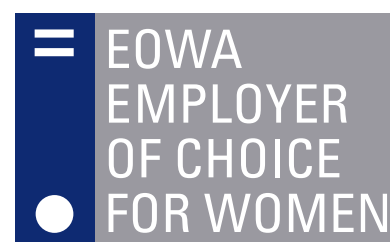
### Catholic Education Commission Project

ACER will continue to conduct a Catholic Education Commission of Victoria project which seeks feedback from parents whose child has left a Victorian Catholic school to attend another Victorian school. The survey was conducted for the first time in 2006, and has now been extended to 2007 and 2008.

### Evaluation of the Teacher of Exemplary Practice program

ACER has been contracted to evaluate the effectiveness of the Northern Territory's Department of Employment, Education and Training's (DEET) 'Teacher of Exemplary Practice' (TEP) program. This is a scheme under which teachers who are able to demonstrate superior teaching skills are rewarded. The evaluation will consider the effectiveness of the current schemes for selecting TEPs in terms of rewarding individual teachers and supporting DEET's delivery of key programs.

### ACER named Employer of Choice for Women



ACER was awarded Employer of Choice for Women status by the Equal Opportunity for Women in the Workplace Agency (EOWA). ACER was awarded the citation on the basis of its existing policies and practices that were shown to support women across the organisation, and have a positive outcome for both women and the business.

### Australian Scholarships Group project

ACER has been successful in applying for a research grant from the Australian Scholarships Group. The grant will fund an analysis of responses to the Social-Emotional Well-Being Survey. In particular, the analysis will investigate the impact of students' gender, year level and socio economic status on their well-being. Michael Bernard, under the auspices of ACER, will present seminars on the findings of this research work. These seminars will be conducted in Australia's major capital cities.



*Improving  
Learning*

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University of Dundee, UK

**Early registration recommended to  
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### **Registrations and enquiries**

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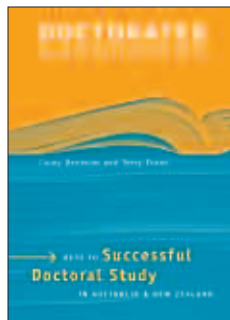
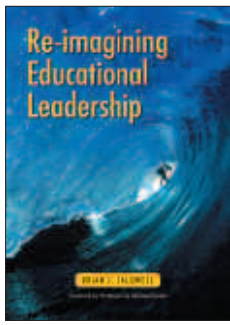
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