

International Education Journal



Special SACE Review Issue

Volume 7 Number 6

November 2006

Published by

Shannon Research Press
Adelaide, South Australia
ISSN 1443-1475
<http://iej.com.au>



Special SACE Review Issue

Volume 7 Number 6
November 2006

Published by

Shannon Research Press
Adelaide, South Australia
ISSN 1443-1475
<http://iej.com.au>



Welcome to the International Education Journal. This is a broadly based journal encompassing research and review articles. Education is interpreted in a wide manner and includes human development, learning, school, formal and informal, tertiary and vocational education, industry training and lifelong learning.

Online - While there will be a hard copy version of the journal it is intended that it will be accessed in almost all instances via the web, free of charge.

Peer Review - All articles appearing in this journal have been subjected to a blind peer-review process by at least one expert in the field.

Copyright - Copyright of material in this journal rests with individual contributors. Apart from fair use such as brief quotation for scholarly purposes, permission to use material in this journal should be obtained from the authors concerned.

Publication Frequency - It is intended that the journal be published four times per year. However given the electronic characteristics of online publishing it is not necessary to wait until a full journal is assembled prior to publishing. Articles once accepted in appropriate form may be published without delay.

The views and styles expressed in the articles in this publication are those of the individual authors and are not necessarily shared by the reviewers, the editors or the editorial advisory board.

Published by:

Shannon Research Press,
39 Dorrien Avenue,
Woodcroft, SA 5162,
Australia

Copyright © 2006

Shannon Research Press

ISSN 1443-1475

All rights reserved. Apart from individual use, no part of this publication may be reproduced in any form or by any means without prior written permission from the publisher.

Designed by Katherine Dix

Printed in Adelaide

November 2006

CONTENTS

Editorial: The SACE debate Keeves, J.P.	791
The case for an Australian Certificate of Education Masters, G.	795
Research and national debate on Australian schooling Keeves, J.P. and Curtis, D.D.	801
The SACE Review panel's final report: Significant flaws in the analysis of statistical data Gregory, K.	814
A critique of the SACE Review panel's report on community views Gregory, K.	834
The heart of the new SACE Gibbons, J.A.	849
A view from outside the confines of South Australia Keeves, J.P.	864
Appendix	870

Editorial Board

Flinders University
Bedford Park, South Australia
GPO Box 2100, Adelaide 5001
Fax: 08-8201 3184

Editors in Chief

Prof John Keeves
john.keeves@flinders.edu.au
Prof Jonathan Anderson
jonathan.anderson@flinders.edu.au

Online Editor

Ms Katherine L. Dix
katherine.dix@flinders.edu.au

Executive Assistant

Dr Helen Askill-Williams
helen.askell-williams@flinders.edu.au

Assistant Editor

Dr Tony Gibbons
tony.gibbons@flinders.edu.au

Book Review Editor

Dr Abul Farooque
abul.farooque@flinders.edu.au

ERC Assistant Editor

Ms Mirella Wyra
mirella.wyra@flinders.edu.au

Publicity Officer

Ms Jeni Thomas
jeni.thomas@flinders.edu.au

Assistant Online Editor

Mr Pawel Skuza
pawel.skuza@flinders.edu.au

ESL Editor

Dr Bobbie Matthews
Flinders University Institute of
International Education
bmatthews@internode.on.net

Editorial Advisory Board

Prof Bob Catley
Department of Political Studies
University of Otago
Prof Kevin Marjoribanks
Graduate School of Education
University of Adelaide
Dr Larry Saha
Department of Sociology
Australian National University
Dr Wendy Duncan
Education Specialist
Asian Development Bank, Manila

Author Information

IEJ welcomes practical and research manuscripts that focus on educational issues, provide a clear purpose and depth of discussion, and are presented in a straight-forward style accessible to an international audience.

The editors reserve the right to return poorly edited or improperly formatted manuscripts. Hard-copy submissions cannot be accepted or returned.

Submissions should be forwarded electronically by email to:
onlineeditor@iej.cjb.net

Aims of IEJ

The aim of the International Education Journal is to publish articles that possess one or more of the following characteristics or qualities.

1. The presentation of substantive findings which are of importance for policy and practice beyond the country in which the research was conducted.
2. The integration of education with academic disciplines such as anthropology, demography, economics, history, law, linguistics, philosophy, political science, psychology and sociology, or examines educational issues from the perspective of the disciplines or investigates issues at the interface between education and one or more of these disciplines.
3. The examination of educational issues from a cross-cultural or indigenous people's perspective.
4. The evaluation of educational policy or programs or the use of information technology of cross-national interest and significance.
5. The employment of advanced research methods and measurement procedures that are clearly explained.
6. The presentation of empirically or analytically based investigations of theory, models or conceptual frame works in the field of education.
7. The syntheses of research findings from comparative and cross-national studies in education.

Invitation

Contributors - Authors are invited to submit material to this journal. As a general guide articles should be not more than 5000 words. The journal may publish longer works such as theses or dissertations as occasional monographs. In every instance material must be received in publisher ready format. Full details of publication style and other requirements are set out under the heading Author Information.

Publishers - If you wish to have books or educational software reviewed and published in the International Education Journal please contact the editors.

Reviewers - If you are interested in contributing to the journal by writing a review article (500-1000 words) please contact the authors indicating your areas of interest. We look forward to hearing from you.

Manuscript Details

The manuscript should:

- show the article's title, authors' names, affiliation, and email addresses (these will be included on the online page), and postal address and telephone numbers (these will be removed from the final online page)
- abstract should not exceed 150 words
- paper should not exceed 5,000 words (20,000 for occasional papers)
- include 5 key words describing the article including those in the title
- be in final form ready for reviewing
- conform to the APA Reference System

General Principles for layout:

- Papers should be prepared using the downloadable template *iejbase.doc* with Microsoft WORD on Mac or PC.
- Use the heading and formatting styles contained in the template, under the Styles Menu, to format article.
- Images and tables should be correctly positioned with caption so that they are referred in the text before their appearance.
- Include images that are imported or inserted into the text from an external source as separate graphic files (GIF or JPG)
- Figures constructed in WORD from the Draw Menu must be 'grouped'.
- Use endnotes, with one set of numbers running through the whole article.
- Use italics (not underline) for emphasis.
- Do not create additional headers and footers in the template *iejbase.doc*, just modify appropriately.
- Do not use page numbers in text.

If you have any questions regarding layout and presentation, please contact the IEJ Online Editor by email on:
onlineeditor@iej.cjb.net

FUIIE

The publishers have arranged for the Flinders University Institute of International Education to produce and host an electronic mirror site containing all material in the Journal, accessed free of charge. There are no restrictions on downloading or printing single copies. The electronic version also provides readers with a search tool.

FUIIE web site:
www.flinders.edu.au/education/fuiie

Editorial: The SACE debate

The Editor – **John P. Keeves**
john.keeves@flinders.edu.au

CONCERN FOR RESEARCH AND AN INTERNATIONAL PERSPECTIVE

This special issue of the *International Education Journal* has been prepared for publication by the Flinders University Institute of International Education and the South Australian Institute of Educational Research to draw attention to the radical changes being introduced in South Australia at the terminal secondary school level. These changes follow on from earlier similar changes that were introduced for the first 10 years of public education in the state of South Australia at a time when efforts were being made towards a common curriculum across Australia together with a common system of education. These highly specific changes to schooling in South Australia are being made with little public debate and little soundly based research evidence on the effectiveness of the public schooling provided within the state. Moreover, these changes occur at a time when there is increasing movement between the Australian states, particularly towards Queensland and Western Australia, and increasing attempts are being made to attract students from countries in Asia to complete their schooling and university education within South Australia. The effects of globalisation and movement of people between countries are clearly having a marked impact on education in South Australia, with the establishment of a small campus of at least one university from the United States in Adelaide and the establishment of commercially based secondary schools to cater for overseas students. Furthermore, the International Baccalaureate programs at all levels are flourishing in South Australia with greater per capita involvement within the state than anywhere else in the world.

It is commonly stated that South Australia has an education system that is both innovative and of high quality, but these statements are made with little supporting evidence to back such claims that is soundly based, or that would be accepted outside the state arising from examination of educational outcomes across the states and territories of Australia, or across the developed countries of the world. Indeed, it is our concern that educational research in South Australia is generally both low in quality and quantity and has been throughout the period of approximately 75 years when the South Australia Institute of Educational Research was founded.

Under these circumstances we consider that it is timely for both Institutes involved in the preparation of this issue of the *International Education Journal* to draw attention in a scholarly way, with a belief in open and informed debate on such issues, to the serious lack of an international perspective as well as a research perspective, in the substantial changes being made to public education within the state of South Australia.

CONCERN FOR PRINCIPLES IN DEBATE

In the preparation of the published report “Success for All”, the Review Panel advocated seven principles that they contended were the foundations for the proposed reform to senior secondary education in the state of South Australia and for the development of a new approach for the South Australian Certificate of Education (SACE).

The new SACE needs to be:

- **responsive** to the needs of individual students and groups of students;

- **credible** in terms of the rigour of the learning process, the standards and methods used to assess students' learning achievements, and in terms of the reliability of what the certificate says graduates know and can do;
- **inclusive** of all students, all cultures and all study pathways so that *success for all* is the prevailing dominant culture;
- **worthwhile** in terms of the benefits perceived by students;
- **futures oriented** so that students have the skills and attributes they need to survive in a globally competitive world, and also to help shape it;
- **connected** to learning that precedes the current SACE years (particularly Year 10), to work and study destinations beyond the senior secondary years, to students' lives, and to the wider, global community;
- **supportive** of quality learning and teaching for all students.

(Success for All: SACE Review at a glance, 2006, p. 8)

These principles are admirable and we have no reason to challenge them. However, the open stating of them is in marked contrast to a report that does not consider:

- the different groups of students involved and, in particular, the needs of able students;
- the portability of the certificate across Australia and other developed and developing countries;
- the alternative pathways being followed by students both in South Australia and in other countries who work for the South Australian Certificate of Education;
- the worth of intellectual challenge, independent effort, both cognitive and practical skills, and strong value systems based on universally accepted values;
- the need to think outside the narrow confines of a state of only one and a half million people at the present time;
- the serious shortcomings of a curriculum developed within the public education system in South Australia for the teaching and learning of students during the first ten years of schooling, and the connections that need to be made to clearly identified pathways for entry into adult life; and
- the findings of research into cognitive acceleration and in the field of neuroscience that is changing the learning and teaching of students at all levels of secondary schooling.

Moreover, it can be argued that the report of the Review Panel is ideologically biased with a particular agenda and is written in terms that largely ignore the seven principles listed above.

The image of one certificate for all, in which all achieve success, fails to consider that dual functions of a qualification at the end of 12 years of schooling of both certification and selection. Moreover, the image of one certificate implies that there is only one pathway for all students to follow at the end of secondary education. We would argue that there are several different pathways that need to be identified and considered, namely:

- (a) to university with or without a brief gap,
- (b) to programs involving the development of high level skills in the field of technology and ICT,

- (c) to apprenticeship and training programs for the development of a wide range of skills,
- (d) to work in the labour force involving specific levels of skill.

In addition, it must be expected that no pathway terminates at the end of a single further stage, but leads on to a lifelong program of recurring education and learning to live and work effectively in a changing world. Each of these pathways has both common and unique requirements. One qualification or even the two alternative qualifications that used to operate in South Australia are no longer appropriate for the four or more alternative or shared pathways of the future. What is important is the guidance required to encourage young people to commence moving along an initial pathway, but with considerable freedom to move in and out of different paths as their interests, commitments and abilities require.

CONCERNING THIS ISSUE OF THE INTERNATIONAL EDUCATION JOURNAL

There is no need to summarise or present information about the Ministerial Review of Senior Secondary Education in South Australia or about the Final Report of the Review Panel, *Success for All*, since the full Report and an Overview are readily available on the SACE Review website at <http://www.sacereview.sa.gov.au>. All that need be said is that efforts are being made to implement the findings of the Review Panel, with little if any debate and with no apparent opposition from the universities or other parties who are stakeholders. However, the words of the Prime Minister, the Honourable John Howard, when launching the Australia Research Alliance for Children and Youth in 2002 are of considerable interest.

One of the things you find in government is that no amount of goodwill is enough, no amount of good policy direction is enough, unless you have accurate information at your disposal. And the use of taxpayer resources to achieve particular goals can be very frustrating if in fact the database on which these policies are based and the objectives pursued are inadequate, or worse inaccurate. (Trewin, citing Howard, 2006)

The announcement that the Organisation for Economic Cooperation and Development (OECD) is proposing to conduct a testing program to assess the abilities of undergraduate students in a program of reform to enhance the quality of higher education in countries that are members of OECD is a major development in the transition from schooling to higher education. This proposal is likely to be hotly debated at both school and university levels. Moreover, this proposal draws attention to the need for an international and Australia wide perspective on the many aspects of the widespread debate that will inevitably emerge.

It is the purpose of this issue of the Journal to provide a meaningful data base from which the Report of the Review Panel *Success for All* can be viewed and debated before the recommended policies are implemented.

The lead article is a paper prepared by Geoff N. Masters, the Chief Executive Officer of the Australian Council for Educational Research, that is titled: *The Case for an Australian Certificate of Education*. This paper is followed by a commentary by John P. Keeves (Chair of Flinders University Institute of International Education) and David D. Curtis (ACER, School of Education, University of Adelaide), titled: *Research and National Debate on Australian Schooling*.

There are four papers that are critiques of the Report of the Review Panel *Success for All*:

1. *The SACE Review Panel's Final Report: Significant flaws in the statistical analyses of available education data* by Kelvin D. Gregory, School of Education, Flinders University,
2. *Tailoring Educational Research to a Desired Goal: The SACE Review Panel's Report on Community Views* by Kelvin D. Gregory, School of Education, Flinders University,

3. *The Heart of the New SACE* by J. Anthony Gibbons, Flinders University Institute of International Education,
4. *A View from Outside the Confines of South Australia* by John P. Keeves, Chair, Flinders University Institute of International Education

These papers were presented at the FUIIE and SAIER Spring Seminar Series on the *Research Issues on the Future of Post-Compulsory Secondary Education in South Australia* on Tuesday 29 August and Tuesday 5 September 2006 (see Appendix 1 for publicity statement). Since Professor Masters was ill and unable to attend on Tuesday 29 August, his paper was read by Dr Ted Sandercock, Chairperson of SAIER.

The Editor

Trewin, D. (2006). (Citing J. Howard, 2002) Report on Workshop on Population Wellbeing Data Groups (Publication. Retrieved 25 October 2006, from National Statistical Service: <http://www.nss.gov.au/nss/home.NSF/pages/Population+Well+Being+Data+Gaps+Workshop?OpenDocument>)

The case for an Australian Certificate of Education

Geoff Masters

CEO, Australian Council for Educational Research

The Commonwealth Department of Education, Science and Training on May 2005 commissioned the Australian Council for Educational Research to investigate and report on models and implementation arrangements for an Australian Certificate of Education. There are ten different certificates currently available across the six states and two territories of Australia that provide a senior secondary school qualification. The first recommendation made by the Review is for national agreement on what should be taught in each school system. The second recommendation is for students across Australia to be assessed against the same standards. This requires the development of natural so-called 'achievement standards' in each subject assessed. A third recommendation is that students are required to demonstrate acceptable levels of achievement of a few key capabilities. A final recommendation is that further work needs to be done to explore how employability skills may be assessed in a consistent way as part of the Australian Certificate of Education. In conclusion, it is emphasised that there is need for a 'common currency' or common language for reporting all senior secondary subject results. There is also a need for national debate on what Australia senior secondary school students should be learning during their final years of secondary schooling, regardless of where they live.

Australian Certificate of Education, achievement standards, key capabilities,
employability skills, senior secondary schooling

BACKGROUND

The desirability of greater national consistency in senior secondary arrangements was discussed by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in July 2003. The following year, the Australian Government canvassed the idea of a nationally consistent Australian Certificate of Education (ACE) for the senior years of school and indicated its intention to work with State and Territory Ministers to begin implementing an ACE.

In May 2005 the Department of Education, Science and Training (DEST) commissioned the Australian Council for Educational Research (ACER) to investigate and report on models and implementation arrangements for an Australian Certificate of Education. Our report was delivered in December.

Our investigation included a desk review of existing and planned senior secondary curriculum and assessment arrangements. Currently, Australia offers nine separate senior certificates through eight awarding bodies as is shown in Table 1. Each of the six states and two territories provides a senior secondary qualification and the Victorian Certificate of Applied Learning is available for students planning to undertake apprenticeships, study at TAFE or enter employment directly from school. A tenth certificate, the International Baccalaureate Diploma, is offered in a number of schools.

Most state and territory certificates have evolved over many years, usually from a set of final-year subject examinations conducted for university entrance. Current arrangements are the result of locally negotiated 'settlements' and reflect different state and territory histories, educational

philosophies, local schools of thought, and the influence of particular individuals and committees in each jurisdiction.

Table 1. Senior Certificates Issued in Australia

ACT	ACT Year 12 Certificate
NSW	Higher School Certificate
NT	Northern Territory Certificate of Education ¹
QLD	Senior Certificate ²
SA	The South Australian Certificate of Education
TAS	Tasmanian Certificate of Education
VIC	Victorian Certificate of Education Victorian Certificate of Applied Learning
WA	Western Australian Certificate of Education

The authorities awarding the nine senior certificates vary enormously in size and have vastly different resources at their disposal. The New South Wales (NSW) Board of Studies (which has significant responsibilities in addition to the Higher School Certificate) has an annual budget of \$94 million; the Tasmanian Qualifications Authority has a budget less than \$3 million. Some authorities are able to develop and maintain detailed syllabuses and annual examinations in dozens of subjects; others have no option but to leave curriculum development and student assessment in the hands of schools.

These historical arrangements have produced considerable divergence across Australia in such matters as the minimum requirements for the award of senior certificates, the level of detail provided in syllabuses and curriculum frameworks, and approaches to assessing and reporting student achievement. There is now a bewildering variety of accompanying terminology. Different terms sometimes convey subtle differences in approach or intentions, but often they do not. And the use of the same term (eg, 'English') sometimes obscures important differences.

Students living in some parts of Australia study centrally specified syllabuses. For example, students taking Biology in NSW complete a core consisting of three 30-hour modules (Maintaining a Balance, Blueprint for Life, Search for Better Health) plus a 30-hour option selected from: Communication, Biotechnology, Genetics, the Human Story, and Biochemistry. Students are required to undertake at least 35 hours of practical activities during Year 12 and to complete at least one open-ended investigation.

In contrast, teachers in the Australian Capital Territory (ACT) are given a Course Framework as a basis for developing their own Biology courses. This framework identifies key content, concepts and processes and requires teachers to use a mix of experimental investigation reports, assignments and tests in the assessment of student learning. But no course structure is provided and there is no external assessment.

Our investigation included national consultations with stakeholders. A widely held view among participants in our consultations was that, regardless of where they lived in Australia, students in the senior secondary school should have similar opportunities to engage with the fundamental knowledge, principles and ideas that made up school subjects. There was general agreement that students in different states and territories taking particular subjects such as Advanced Mathematics or Chemistry should be able to engage with those subjects in similar depth and with similar academic rigour. To date there has been very little analysis of what students were taught in different jurisdictions and even fewer attempts to identify essential curriculum content.

¹ based on procedures of the Senior Secondary Assessment Board of South Australia.

² to be replaced by the Queensland Certificate of Education in 2008.

There is also very little information about how standards compare across Australia. Part of the reason for this is that there is no way of comparing performances in a subject such as Accounting across state boundaries. A mark of 85 in one state does not necessarily represent the same level of achievement as a mark of 85 in another. While some states report results as marks out of 100, others provide marks out of 50, and still others report in terms of a small number of achievements levels. Currently there is no way of comparing a 'Band 6' performance in NSW with a 'Very High Achievement' in Queensland or a mark of 40/50 in Victoria. Some employers told us that they find these differences confusing.

For students wishing to enter university, an attempt is made to provide nationally comparable tertiary entrance ranks (ENTER scores). But the process used to do this makes the assumption that students in each state or territory have the same overall distribution of achievement: a necessary but dubious assumption in the light of other evidence about interstate differences. Some university selection officers now believe that students from some states are less well prepared than their ENTER scores suggest.

NEW STANDARDS FOR SENIOR STUDENTS

Earlier in 2006 the Australian Council for Educational Research provided a report to the Australian Government on options for the introduction of an Australian Certificate of Education (ACE) for the final years of secondary school. Our report and an opportunity to comment on it are available at www.dest.gov.au/ace.

The report proposes the introduction of an ACE based on national standards for what is taught in Years 11 and 12 and for how well students should be expected to learn what is taught. These standards are captured in three key recommendations.

Our first recommendation calls for national agreement on what should be taught. We argue that, regardless of where they live in Australia, students should be able to engage with school subjects in similar depth and with similar academic rigour. In individual subjects (such as Economics, Biology and Advanced Mathematics), we recommend the identification of a core of essential knowledge, skills, ideas and principles. These are the big ideas that all students taking that subject should have an opportunity to learn regardless of the state or territory in which they live. Except in some vocational subjects, no systematic attempt has been made to do this.

In making this recommendation, we were not proposing that the entire curriculum for a subject should be the same across the country. Schools must be able to respond to local needs and circumstances and there is value in a degree of diversity in what and how students are taught and in opportunities for experimentation and innovation. But we believe that in most senior school subjects, students should have guaranteed access to an agreed core of essential content. And we suggested a number of subjects for which this work should be commenced.

It is difficult currently to establish what is common across Australia because states and territories provide different levels of specificity in their syllabuses and curriculum frameworks. In smaller systems, which have limited resources for curriculum development and student assessment, teachers often are given only broad guides to what they should teach.

Our second recommendation calls for students throughout Australia to be assessed against the same standards. Currently it is not possible to compare achievements in a subject such as Accounting from one jurisdiction to another. There is no way of knowing whether a 'Band 6' performance in NSW represents a lower or higher level of achievement than a 'Very High Achievement' in Queensland, or a study score of 40/50 in Victoria. The different schemes used to report student results and the current lack of comparability were described to us as confusing and unnecessary.

We proposed the development of a set of national ‘achievement standards’ for senior school subjects. For any given subject, there might be five such standards (perhaps labelled E to A) with each standard describing and illustrating the kinds of knowledge and skills that students would have to demonstrate to achieve that standard. Some states already report in terms of subject standards. Our proposal is that national standards be developed to provide a common format for reporting results and a level of comparability that does not currently exist.

We stopped short of recommending the introduction of national Year 12 examinations. If results in a subject are reported in terms of the same set of achievement standards, then a level of comparability across jurisdictions will follow. Of course, to the extent that states and territories share examination and other assessment materials in a subject, this level of comparability will be improved.

Our third recommendation is that, to be awarded the ACE, students should be required to demonstrate acceptable levels of a few key capabilities: the ability to write in English; to read with understanding; to apply mathematical concepts to everyday problems; and to use computer technology. We made this recommendation because of claims that some students being awarded senior certificates have only limited mastery of these skills and because of research evidence that failure to master these basics (especially reading and writing) is correlated with poorer employment, health and social outcomes.

The focus of existing senior certificates is on how well students have learnt subject matter. Except in Queensland, there is no direct assessment of basic skills that underpin school subjects and that are essential to learning, work and life beyond school. The Australian Chamber of Commerce and Industry and the Business Council of Australia have identified other so-called ‘employability skills’ such as the ability to work as a member of a team and to plan and organise activities. Our report recommended further work to explore how these skills also might be assessed in a nationally consistent way as part of the ACE.

In the course of our work we found ourselves asking many questions about current senior secondary arrangements. For example, does Australia, with a smaller population than some American states, really require nine different senior certificates? Do we need seven distinct syllabuses or curriculum frameworks in a subject such as Physics, especially when these syllabuses are designed for essentially the same group of tertiary-bound students? At a time when the states of the European Union are working to make their qualifications more compatible and more comparable to increase the international competitiveness of European education, to encourage mutual recognition and to facilitate student mobility, can Australia afford to have senior secondary arrangements which are becoming increasingly disparate?

YEAR 12 RESULTS? WE NEED A COMMON CURRENCY

And the situation is becoming worse. With proposed changes in a number of states, including Queensland, South Australia (SA) and Western Australia (WA), senior secondary arrangements in this country are about to diverge further. Across the country there are bewildering variations in terminology, requirements that make it harder to achieve a certificate in some states than in others, and as many different schemes for reporting Year 12 results as there are agencies responsible for doing this as is shown in Table 2.

In all this variety, the states and territories are staunch defenders of their own systems. Each appears to consider its Year 12 arrangements superior to those of the rest of the country, that are variously described as lacking in academic rigour, unresponsive to local and student needs, too rigid and bureaucratic, based on narrow and limited forms of assessment, and captured by educational fads. It seems that a number of states would support a national approach if it meant

others adopting their arrangements. In reality, there is a very limited basis for accepting any claim to superiority.

Table 2. How Year 12 subject results are reported

ACT	a grade (A, B, C, D, E)
NSW	a mark out of 100, placing the student's result in one of six 'bands' (Band 1 to Band 6)
QLD	an 'achievement level' (Very Limited, Limited, Sound, High, Very High Achievement)
SA/NT	currently: a score out of 20, placing the student's result in one of five grades (A, B, C, D, E) proposed: seven grades (A+, A, B, C, D, E, not yet achieved)
TAS	an 'achievement level' (Preliminary, Satisfactory, Commendable, High, Exceptional Achievement)
VIC	a score out of 50
WA	currently: a grade (A, B, C, D, E) proposed: a 'level' (3, 4, 5, 6, 7, 8) and a 'band' (first/medium/high) within that level

Source: ACER (An Australian Certificate of Education: Exploring A Way Forward)

Contrast this with what is happening in Europe where the states of the European Union are collaborating to enhance the consistency and comparability of their educational qualifications. The aim is to increase the international competitiveness of European education, to promote mutual recognition of qualifications across nation states and to facilitate student mobility. Under the so-called 'Bologna Process', considerable progress has been made towards the development of more consistent higher education arrangements and qualifications.

There was a glimmer of hope at the meeting of Commonwealth, State and Territory Ministers of Education in Brisbane in 2006 where it was decided to establish a working party to examine the feasibility of developing a common scale for reporting all senior secondary subject results. This proposal, led by Victoria, is a welcome development if it leads to a common language for reporting Year 12 results.

But a common language (such as A to E grades) is only a first step. The bigger challenge – and one that the ministers appear to have taken up – is to ensure that it is just as difficult to achieve an 'A' in, say, advanced mathematics in NSW as it is to achieve an 'A' in WA. This level of consistency requires agreement on how much knowledge, understanding and skill students need to have, and the quality or depth of understanding they need to demonstrate, to receive an 'A' in each state and territory.

And this highlights the next difficulty. Money is money, whether measured in dollars, euros or yen. But can Chemistry results be compared meaningfully from one state to another? The answer to this question depends on how similar Chemistry curricula are across Australia. To the extent that Year 12 curricula vary from one state to another, any attempt to introduce a common reporting language and to compare grades or marks across the country is likely to be of limited value.

Surprisingly, very few attempts have been made to investigate what students are taught in the final years of school in Australia. To what extent are students in different states and territories taught the same facts, principles and skills in a subject such as Economics? Is there a body of fundamental knowledge and big ideas to which all students taking Economics should be exposed, regardless of where they live in Australia? Questions such as these have not been addressed in any systematic way.

Earlier this year, the Australian Government initiated an investigation into what is being taught in senior school English, Mathematics, Physics, Chemistry and Australian History courses. This investigation can tell us whether curricula in these subjects are sufficiently similar to permit the kind of consistency in reporting that the ministers are seeking. It also will provide a basis for thinking about what should be taught, and especially what core content all students taking a

subject should have an opportunity to learn. On this question there is bound to be vigorous debate, as there should be in relation to curriculum matters.

As other countries work to break down unnecessary barriers to communication and to teacher and student mobility, it is time for Australia to adopt a more consistent language and common currency for reporting Year 12 results. It is also time for a national debate on what Australian students should be learning in the final years of secondary school, regardless of where they live.

Research and national debate on Australian schooling

John P. Keeves

School of Education, Flinders University john.keeves@flinders.edu.au

David D. Curtis

Senior Research Fellow (ACER) curtis@acer.edu.au

This paper is a response to the paper prepared by Masters that is titled 'The case for an Australian Certificate of Education'. It argues that a national debate is needed urgently on the many issues that have arisen in Australian education. These issues include not only the curriculum provided for students at the final stages of secondary schooling, and the certification of attainment of educational outcomes on completion of 12 years of schooling, but also the curriculum of schools across Australia, particularly at the lower and middle secondary school levels. In addition, there are related issues associated with participation in higher education and the completion of a first degree at an Australian university. All too often, decisions are made at all levels of education on ideological grounds and without consideration of the body of research findings that are available to guide the making of decisions and the monitoring of development and change. This paper draws on readily available research to show the similarities and differences between the state education systems to argue a case for informed debate that draws on the large body of evidence that is available.

Retention rates, participation rates, educational research, research-based evidence, school curriculum, senior secondary schooling, secondary school curriculum

Professor Masters has prepared a timely statement on a step forward towards development of a curriculum for Australian schools together with appropriate certification and selection procedures that would have portability not only across the states of Australia, but also across the highly developed and developing countries of the world. In response to Professor Masters' paper we draw on published research findings from ACER and other Australian research studies in an endorsement of the need for national debate on Australian schooling based on the findings of research into educational issues. A national newspaper has been deliberately stimulating such a debate during 2005 and 2006, but the newspaper articles that have been written and published have been largely devoid of important ideas about the nature of school learning and the findings of research into the success or otherwise of learning programs in schools and the attainment of identifiable outcomes of school learning.

It is clearly time for a national debate on what Australian students should be learning in all years of schooling and not just the final two years of secondary schooling regardless of where they live, as well as on what students should be learning during the terminal years. The newspapers have focused debate on the curriculum of Australian schools, not only in history and literature, but also in mathematics and science during the years of secondary schooling. However, this debate does not draw on the findings of research that show that outcomes of education are greatly influenced by the learning that occurs in homes, in the peer group and through the media, and more recently through information and communication technology, that is increasingly controlled not by educational bodies but by international commercial media organisations. Consequently, because

of their growing role informal and non-informal education it is highly appropriate that the media should be critically involved in the debate about the outcomes of schooling. Moreover, the media should be examining in a critical way their recently assumed roles, functions and responsibilities of providing educational opportunities throughout all stages of education from early childhood through to lifelong and recurrent education.

The OECD, building upon its considerable experience with Adult Lifelong Testing programs, its pioneering work on international educational statistics in the *Education at a Glance* publications and its more recent Programme for International Student Assessment (PISA), is proposing the introduction of a testing program to compare internationally the competencies and cognitive skills of students on entry into higher education. It is widely recognised that entrance standards, course requirements and student populations vary widely between disciplines and universities within Australia, and with respect to students drawn to Australia from overseas and going overseas to study. Moreover, the Australian Universities Quality Agency is seeking to make it compulsory for Australian universities to compare themselves on several measures with their international counterparts. Such a program if introduced within the foreseeable future could change many aspects of how both upper secondary schools and universities operate. The critical issues are concerned with what should be measured in such a program, at what stage, and how testing should take place.

In the current debate about education across Australia, research has been largely ignored because educational administrators and, in particular curriculum developers and those involved in the assessment and evaluation of educational outcomes, are rarely trained to examine the research that is available and is published in accessible form for all to read. Consequently, research findings are rarely discussed, or sought to inform debate and guide decision making in educational planning and curriculum development. Over the past 75 years the Australian Council for Educational Research has systematically assembled a large body of research findings about Australian education. Moreover, the ACER has strong international links that enable it to contribute to and draw upon research conducted in a world context, particularly with its links to the OECD in Paris.

We in Australia are indeed fortunate that the six Australian states and the Australian Capital Territory form a natural laboratory to provide research findings for the Australian education system. While the Northern Territory is also part of that system, it has unique problems, which are not only of great interest, but also of importance, that continue to confound the evidence and the findings derived from that Territory. Clearly, the Australian states can learn from each other about reform that would lift the quality of Australian education. However, Australian education can also learn from and contribute to developments and change that occur in other countries

Professor Masters' paper about future developments in Australian education at the senior secondary school level is presented in a South Australian setting at a time when radical change is being proposed for education not only at the terminal stage, but also involves all other stages of education within the state. Consequently, it is necessary to ask, when the available research evidence is examined and ideology does not dominate the debate, three important questions.

- How well does South Australia fare when the outcomes of education are examined?
- What can the South Australian education system learn from other school systems when set within a world context?
- Can South Australia join with other state education systems to share the necessarily limited resources available for Australian education?

In the sections that follow, evidence is presented on selected educational outcomes. The evidence is drawn from cross-national achievement tests, Australian data on school retention and Australian data on participation in higher education. Achievement and attainment data are presented for the cohort of young people who were born in 1985. This group is referred to as the 1985 Birth Cohort.

EVIDENCE FROM RESEARCH RELATED TO READING, MATHEMATICS AND SCIENCE LITERACY

Australia has been a very active participant in the Programme for International Student Assessment (PISA) studies of 15-year-old students conducted under the auspices of the OECD into performance in reading, mathematics and science literacy in the Years 2000, 2003 and more recently in 2006. In PISA 2000, reading literacy was the main domain and mathematics and science were minor domains. In PISA 2003, mathematics literacy was the main domain and science and reading literacy were minor domains, while in 2006, science literacy is the main domain. Figure 1 records the profile in the Australian states and territories in comparison with other countries in reading literacy in the PISA 2000 testing program. Australia does extremely well along side other English-speaking countries. Moreover, South Australia performs in the top bracket of the Australia states. Three other Australian states achieve at a lower level among mainly European countries, and the Northern Territory performs among countries with a sizeable immigrant population.

Figures 2 and 3 present the performance profiles of the Australian states and the ACT in PISA 2000 and PISA 2003 respectively, and record the mean levels of achievement not only in reading literacy but also in mathematics and science literacy. The graphs shown in Figures 2 and 3 indicate the stability of the performance in reading, mathematics and scientific literacy of the samples of 15-year-old students drawn in the studies on the two occasions. The achievement of South Australian students is satisfactorily high not only in a cross-national setting, but also in comparison with the other Australian states and territories. In reading the graphs the sizes of the standard errors (SE) and the estimated magnitude of a 'year of learning' should be noted, since there are sizeable differences between the states in levels of achievement on these international tests, that contain a substantial proportion of constructed response items together with both simple and complex multiple choice items.

It can be argued that the differences between the Australian states are largely dependent on the distribution of students across the years or grades of schooling that result from the different policies and ages for entry to school and grade progression that operate in the different states.

Table 1 records the percentages of 15-year-old students in the three relevant school grade levels.

While there are age and grade effects between the states, these effects do not account for the differences in performance on the reading, mathematics and science literacy tests, nor is there a clear relationship between the immigrant populations of the states and their levels of achievement. In all Australian states, the modal school year for students in the PISA 2003 sample was Year 10. The average achievement results for Year 10 students only are shown in Figure 4. This figure shows state profile comparisons without any confounding effects of age and grade differences. It reveals that there are substantial differences in achievement, amounting to more than six months of schooling, between states, excluding the high figure for the ACT. The recorded differences are too large to be attributable to chance and show a consistency between occasions that suggest that they are related to curriculum differences between the states.

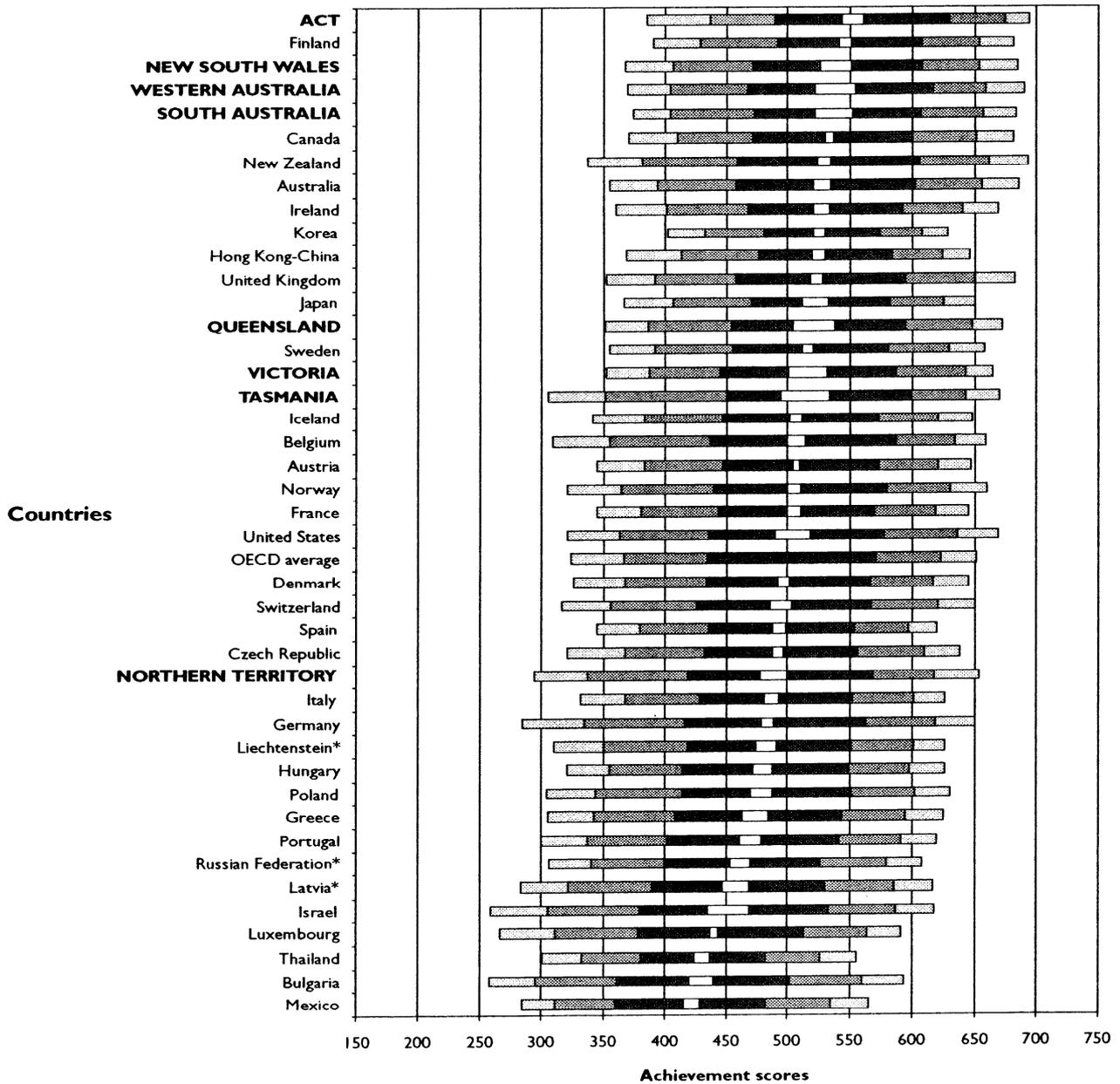


Figure 1. National performance in reading literacy in PISA 2000 (Source: Marks and Cresswell, 2005, p. 143)

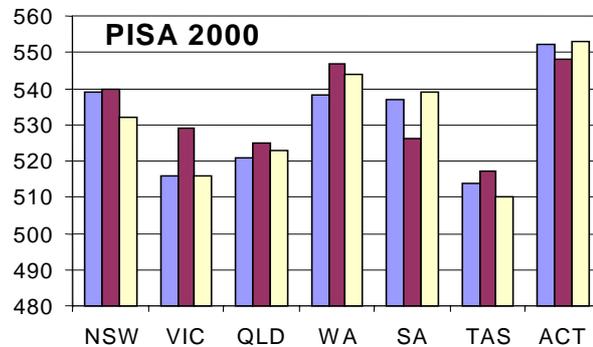


Figure 2. Comparison profiles of reading, mathematics, and science literacy for 15-year-old students in Australian states, (PISA, 2000) (Estimates 7.5 units = SE, 35 units = Year of Learning) (Source: OECD, 2001)

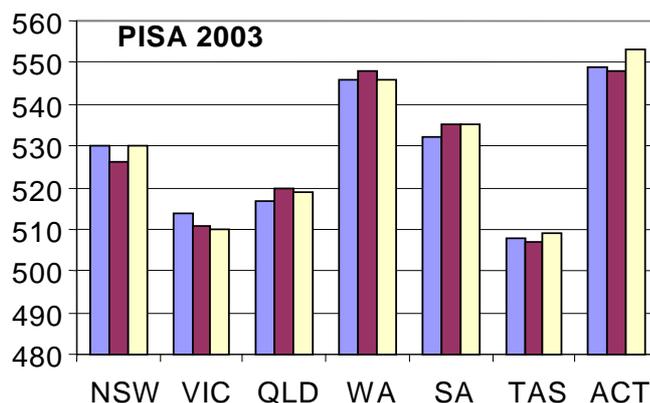


Figure 3. Comparison profiles of reading, mathematics, and science literacy for 15-year-old students in Australian states, (PISA, 2003) (Estimates 5.0 units = SE, 35 units = Year of Learning) (Source: OECD, 2004)

Table 1. Percentages of 15 year-old students in different grades in Australian states (PISA, 2000)

State	Year level (%)		
	9	10	11
New South Wales	8	86	5
Victoria	13	81	5
Queensland	1	57	42
South Australia	3	79	17
Western Australia	1	49	49
Tasmania	7	84	8
Australian Capital Territory	7	92	0
TOTAL	7	76	17

(Source: Marks and Cresswell, 2005, p. 145)

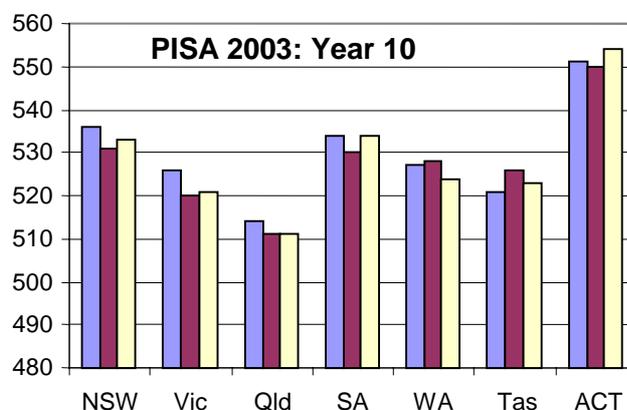


Figure 4. Comparison profiles of reading, mathematics, and science literacy for 15-year-old students in Year 10 in Australian states, (PISA, 2003) (Source: OECD, 2004)

EDUCATIONAL ATTAINMENT OF THE 1985 BIRTH COHORT

The students who were tested in the PISA 2000 study at the age of 15 years were born in 1985, and although they commenced school at different ages in the different states this would appear not to explain the observed differences in reading achievement by the age of 15 years. These students could leave school in general after attaining the age of 16 years, with marked differences between states in their retention to Year 12 at school as well as their levels of literacy.

The students under survey in PISA 2000 were Year 8 students in 1998 and formed the modal grade cohort for the calculation of retention rates to Year 12 in 2002. The widely accepted index

for the calculation of retention and participation rates is relative to the size of this Year 8 cohort, although an age cohort at the age of 14 years is also widely used. Both these student groups are formed immediately prior to any dropping out from school in most developed countries that have an age level at 15 years for compulsory schooling. These indexes have enabled cross-world and cross-state comparisons over the past 40 years when these comparisons were first made through testing conducted by the International Association for the Evaluation of Educational Achievement (IEA).

These apparent retention rates in 2002 based on the size of the Year 8 cohort in 1998 for the Australian states are presented in Figure 5, and it should be noted that the rate recorded for South Australia is noticeably lower than in other states. This type of evidence would appear to have been of considerable concern to the SACE Review Panel (Crafter, Crook and Reid, 2006).

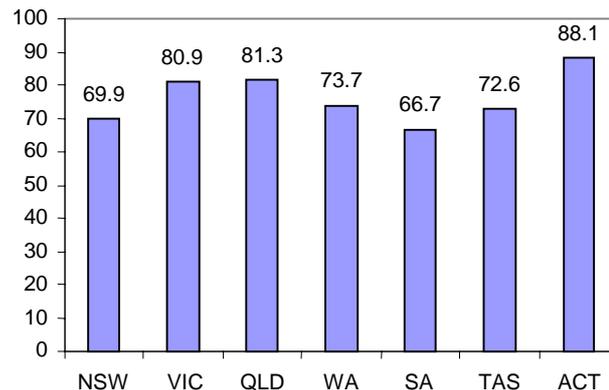


Figure 5. Apparent retention rates for Australian States in 2002. Source: ABS, *Schools Australia*. Cat. No. 4221.0

The emerging concern for retention rates has interested several educational research scholars including Lamb and Bain (2004) and Ryan and Watson (2006). There is general agreement that several measurement factors beside the choice of a base cohort of age or grade influence apparent retention rates and serve to confuse and confound the making of comparison between states and over time. These factors include (a) population changes involving internal and external migration, (b) Year 12 repetition, (c) participation in TAFE study, both while at school and after leaving school prior to completing Year 12 study, (d) part-time study and part-time employment, (e) differences in age-grade structure involving grade repetition and age of commencing school, and (f) share of Indigenous youth in the school-aged population. Ryan and Watson (2006) examined the fluctuations in retention rates over the period 1989 to 2002 that included an Australia-wide peak in 1992. They made adjustments for these factors where meaningful adjustments could be made. Figure 6 presents their graphs of both the unadjusted (official) and the adjusted retention rates for Australia from 1989 to 2002.

The adjustments largely eliminated the anomalous peak that occurred in 1992 and indicate that after marked growth in the late 1980s there was a relatively stable situation for the following decade. However, in 2002 there were differences between the Australian states in both Year 12 retention rates and age 17 years participation rates both for the unadjusted and the adjusted estimates. The estimates made by Ryan and Watson (2006) are plotted in Figures 7 and 8 for retention and participation rates respectively for the Australian states since both grade and age cohorts are widely employed and show slightly different patterns.

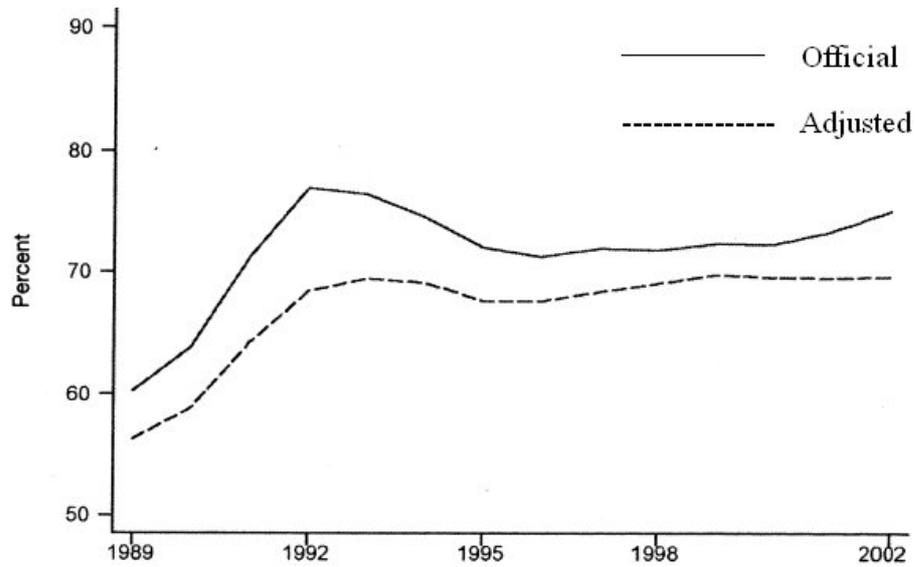


Figure 6. Official and adjusted retention rate estimates 1989-2002 (Source, Ryan and Watson, 2006, p. 213)

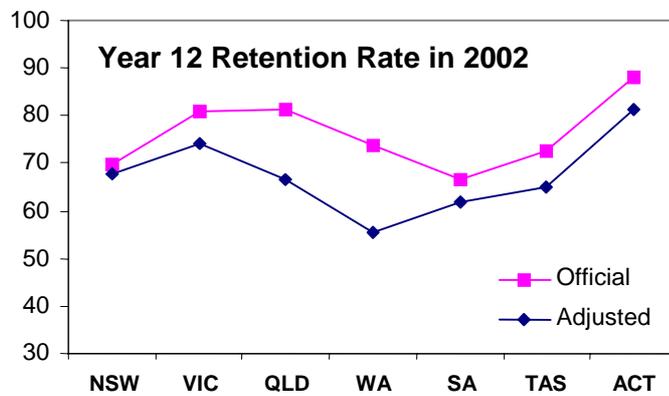


Figure 7. Year 12 retention rate estimates for 2002 by Australian state (Source, Ryan and Watson, 2006, p. 214)

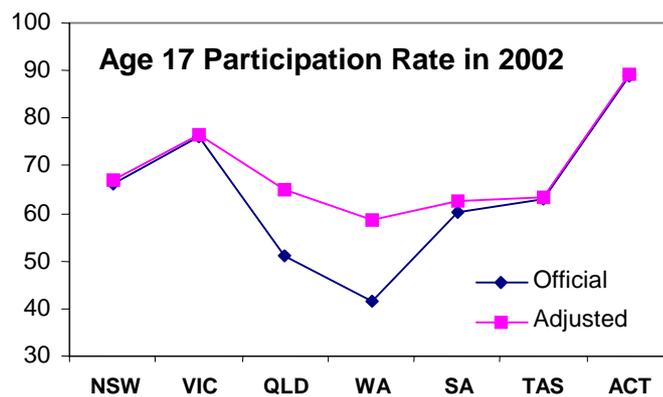


Figure 8. Age 17 participation rate estimates for 2002 by Australian state (Source, Ryan and Watson, 2006, p. 214)

While South Australia has a relatively low adjusted retention and participation rates, Ryan and Watson (2006, p. 203) warn that:

Governments should be cautious in using official year twelve retention rates as a measure of the performance of Australian school systems.

This warning was issued because non-school factors such as the availability of work for teenagers varied considerably between states.

Moreover, the differences are of sufficient magnitude to indicate that the procedures purportedly being used at the present time for equating Tertiary Entrance Rankings between states for admission to universities are flawed. This suggests that it is not just Year 12 certification procedures that should be examined critically, but attention should also be given to the procedures employed for the allocation of university places as well as the procedures used by universities for the selection of entrants to bachelor degree courses.

SCHOOL ACHIEVEMENT OF THE 1985 BIRTH COHORT

The PISA 2002 students in the cohort under examination in this paper were mainly in Year 10 in 2000, Year 8 in 1998 and in Year 4 in 1994. Data are available on the achievement a sample of this cohort of students in Year 4 in 1994, as well as a Year 8 sample of students in the same year for an IEA testing program, but no evidence was obtained on meaningful state samples from the IEA testing program in 1998 in the TIMSS and TIMSSR studies. However, evidence is available for Year 4 and Year 8 samples four years later in 2002 from the TIMSSR studies. Unfortunately equating of the scales of achievement has never been accurately carried out within Australia nor adequately presented in the international TIMSS reports. The monitoring of change over time in educational achievement no longer appears to interest those conducting IEA studies although it was originally argued to be an aspect of considerable interest and importance in the original IEA work and was taken into consideration in the Second IEA Science Study (Keeves, 1990) and the Reading Literacy Study (Lietz, 1995).

Under these circumstances, the most appropriate way to examine change in performance by state from 1994 to 2002 in both mathematics and science of students at the Year 4 and the Year 8 levels, is to choose the level of achievement of the two New South Wales (NSW) samples on the two occasions as the base line for the comparisons. It is recognised that the NSW mean is close to the Australian mean and acts as a surrogate for the Australian mean that cannot be estimated.

Figures 9 and 10 record the changes in achievement over an eight year period for the Year 4 and Year 8 grade samples, for cohorts of students of interest in this paper, that are estimated relative to the New South Wales base-lines. However, some caution must be expressed in examining these graphs.

These graphs indicate that over the eight year period there has been a decline in achievement relative to New South Wales in the following situations:

- Year 4 Mathematics Australian Capital Territory and Western Australia
- Year 4 Science Western Australia
- Year 8 Mathematics Australian Capital Territory, Tasmania, Queensland, Western Australia
- Year 8 Science Australian Capital Territory, Tasmania and Western Australia.

South Australia shows declines in performance in all four graphs that are estimated to be less than half a year of learning. Moreover, South Australia is not among the higher performing states in achievement in these domains of content knowledge. It should be noted, however, that the IEA tests and PISA tests are assessing very different outcomes of education. The IEA tests assess achievement in content areas and the PISA tests assess aspects of literacy, primarily reading literacy. Consequently, while there is a consistent pattern over time on literacy performance, there is a decline in content knowledge in mathematics and science that would appear to be related to curriculum changes in the intervening years.

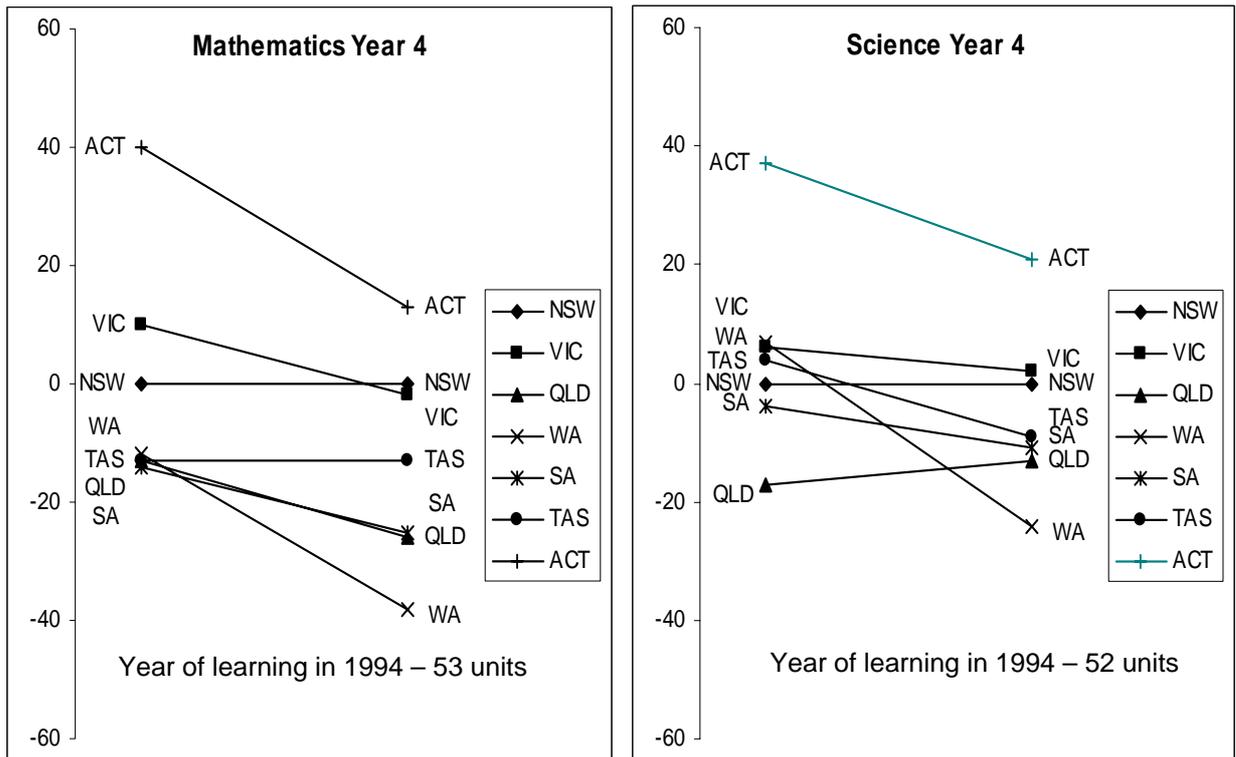


Figure 9. Change in achievement in mathematics and science from 1994 to 2002 relative to New South Wales (Year 4) (Sources of data, TIMSS Reports)

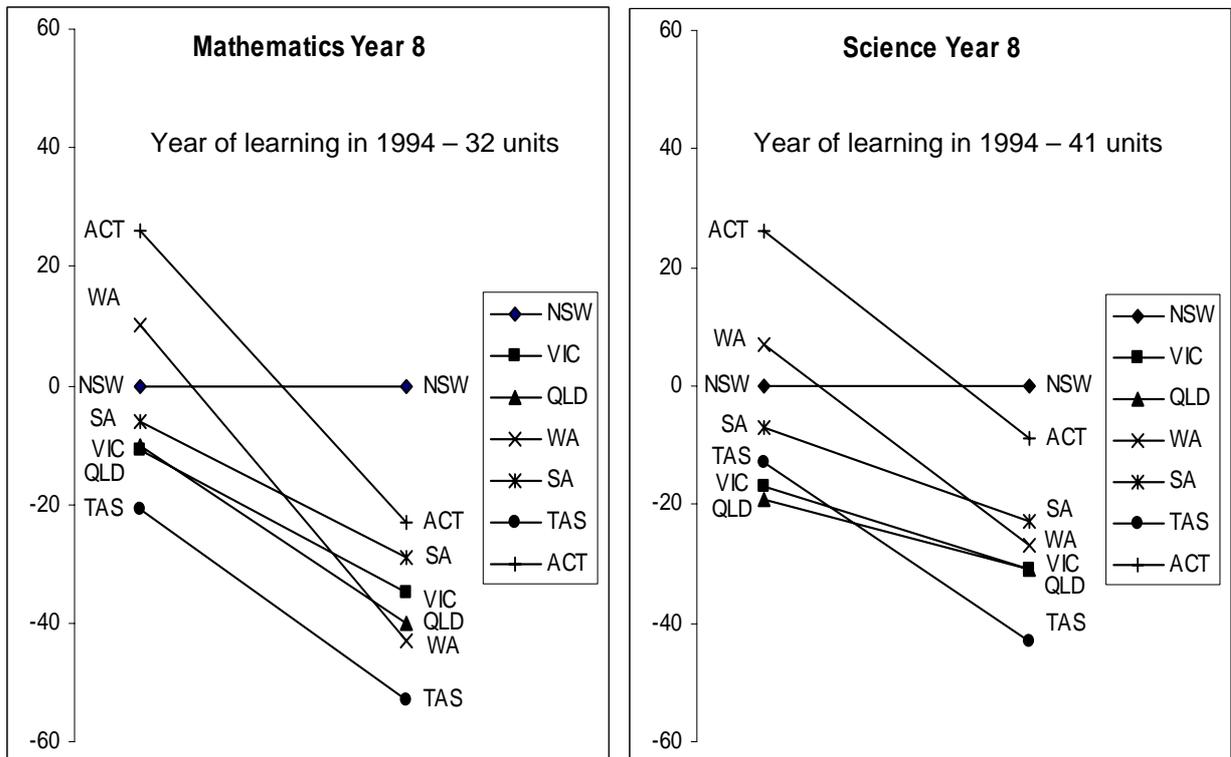


Figure 10. Change in achievement in mathematics and science from 1994 to 2002 relative to New South Wales (Year 8) (Sources of data, TIMSS Reports)

PARTICIPATION IN HIGHER EDUCATION

After the completion of schooling at the Year 12 level in 2002, the PISA 2000 cohort that is under survey in this paper might be expected to have continued into higher education at an Australian university. Initially, the size of the cohort under consideration was based on the number of 14-year-old students at school in 1999, and formed an age cohort rather than a grade cohort. The information of interest is not the precise career paths taken by the students, whether it involved proceeding directly to university, or taking a gap of one or more years or initially taking a TAFE course and converting across to university study. Rather, it is the number of university places made available for bachelor degree courses for domestic students in the year 2003, for which these students might be expected to apply. The participation rates estimated in this paper are the number of places in bachelor degree courses held by domestic students divided by the sizes of the age cohort that becomes available who seek a university education in the given year within each state or territory and across Australia as a whole. It should be noted that in these calculations, rates are under consideration, which involve the ratio of two increments and not the actual size of a potential pool. This definition requires that cross-state universities such as the Australian Catholic University, the Australian Maritime College and the Australian Defence Force Academy must be excluded from consideration at the state level but not at the Australian level. Moreover, the private universities, such as Bond University, the Christian Heritage College and Tabor College must be excluded because at that time they did not receive the necessary support for their students to take bachelor degree programs on the same basis as did the public universities. Nevertheless, there is a further group that can be said to have come on 'on-stream' in 2003 and that contributed to an increase in the pool of persons who might in time have sought to study at a university and who needed to be taken into consideration in planning. The size of this group is taken to be the number of immigrants to Australia in the financial year 2000-2001 who were aged between 15 and 39 years old and who, as a consequence, would not be included in a grade or age educational cohort, but who might over time become eligible for university study. This group is then partitioned to each state in proportion to the immigration intake in that state, and is subsequently added to the age cohort to provide the base incremental figure for persons who were available to take part in higher education and to increase the number of university-educated persons in Australia.

Table 2 records the participation rates by state and Australia overall for domestic students for whom places were available in 2003 for entry as new students into bachelor degree programs for (a) the age cohort, and (b) the age plus immigration cohort.

Table 2. Participation rates for domestic students in bachelor degree programs in 2003

State	Age cohort	Age plus immigration cohort
New South Wales	56	43
Victoria	60	50
Queensland	67	55
Western Australia	60	48
South Australia	59	54
Tasmania	52	50
Australian Capital Territory	95	84
AUSTRALIA	62	50

Sources, ABS (1998-2006), ABS (2003-2006)

Table 3 records the expected graduation rates from bachelor degree courses at universities at time of entry into those courses in 2003, with expectations based on the number of bachelor degree graduates in 2002. The base line data are (a) the size of the age cohort in 1999, and (b) the size of the age cohort together with the increase in size of the population through immigration, as is used in Table 2.

The graduation rate is the percentage of the cohort who might be expected to graduate with a bachelor degree in due course with expectations based in the number of bachelor-degree graduates in 2002.

Table 3. Graduation rates for domestic students in bachelor degree programs in 2002

State	Age cohort	Age plus immigration cohort
New South Wales	36	28
Victoria	42	35
Queensland	38	31
Western Australia	37	30
South Australia	38	35
Tasmania	31	30
Australian Capital Territory	61	54
AUSTRALIA	39	32

Sources, DEST (2002-2006)

Table 4 records the participation rates for entry into all tertiary level courses in 2003 for domestic students at universities. The participation rates are the percentages of the age cohort and the age plus immigration cohort for whom there were entry places taken in tertiary level courses in 2003 by domestic students.

Table 4. Participation rates for domestic students in tertiary level courses at universities in 2003

State	Age cohort			Age plus immigration cohort		
	All courses	Straight from school	Completed Year 12 ¹	All courses	Straight from school	Completed Year 12 ^a
New South Wales	68	22	36	52	17	28
Victoria	64	28	44	53	23	44
Queensland	77	25	42	64	21	35
Western Australia	65	21	36	53	17	29
South Australia	63	25	37	58	23	34
Tasmania	57	20	37	55	19	36
Australian Capital Territory	100	21	60	88	18	58
AUSTRALIA	70	25	41	57	20	33

Sources, ABS (2003-2006), ABS (2002-2006)

CONCLUSIONS

Several issues arise from these data. There are differences in achievement between the states in reading, mathematics and scientific literacy. These differences cannot be explained by differences in school starting ages or progression through the early years of schooling. There are differences in the content knowledge of students between states and differences in these domains that have varied over time. This suggests that some differences between states reflect changes in curriculum specification and or pedagogical practices. In addition, there are noticeable differences between the states and territories in both the number of university places available and the proportion of school leavers entering higher education straight from school. The Australian Capital Territory and Queensland have relatively more university places available while Tasmania has fewer. Victoria has a high proportion of young people entering university directly from school while Tasmania, Western Australia and the Australian Capital Territory have fewer. Furthermore, there

¹ Columns headed 'Completed Year 12' shows the percentage of people admitted specifically on the basis of their Year 12 results. People admitted following other qualifications may also have completed Year 12, so the proportion of school completers is likely to be substantially higher than the figures presented indicate.

are substantial differences in the proportions of university entrants who are admitted to university on bases other than Year 12 results. The differences in the bases upon which different universities in the different states admit students to bachelor degree courses, particularly with respect to mature age applicants, warrant investigation.

With the marked shortage of persons with advanced technical skills, is too high a proportion of the limited resources provided by the Commonwealth Government for education at all levels being assigned to universities and too little to vocational and technical education programs? While information is available by university and by state as well as by course type at all levels of the higher education, little information is readily accessible by state or by institute in the field of vocational and technical education. Nevertheless, it is in these fields that Australia, it would seem, has to recruit extensively from overseas. Birrell and Rapson (2006), however, argue that the changing nature of Australia's economy demands more rather than fewer places in higher education.

In this commentary on Professor Masters' paper that appeals for consideration to be given to strengthening and perhaps building an Australian education system, we have drawn attention to substantial differences between the states in the provision of and participation and performance in education at different levels across Australia. We believe that it is clearly time to engage in national debate on these issues that is based on the scattered findings of research that has been undertaken into Australian education, all too often with little thought given to the major policy issues that demand attention.

The current proposed changes, particularly those in South Australia, Queensland and Western Australia at the senior secondary school stage, have repercussions both at the lower and middle secondary schooling levels as well as at the university and technical and further education levels. These proposed changes, if implemented, would give rise to greater divergence between the states at a time when greater movement between the Australian states and increasing globalisation would seem to suggest that convergence towards an Australian system is required. Furthermore, if Australia decides to participate in the OECD testing program of all university entrants, the need for informed debate on the disparities between states in the education they provide and between universities prior to making the decision to participate becomes increasingly necessary and of considerable urgency.

REFERENCES

- Australian Bureau of Statistics (ABS) (2002-2006). *Education and Training Experience*. Cat. No 6278.0, Canberra: ABS
- Australian Bureau of Statistics (ABS) (1998-2006). *Schools Australia*. Cat. No 4221.0, Canberra: ABS
- Birrell, B. and Rapson, V. (2006). *Clearing the Myths Away: Higher Education's Place in Meeting Workforce Demands*. Sydney: Dusseldorp Skills Forum.
- Crafter, G., Crook, P., and Reid, A. (2006). *Success for All: Ministerial Review of Senior Secondary Education in South Australia. Final Report and Overview of the SACE Review*. Adelaide: Government of South Australia
- Department of Education, Science and Training (DEST) (2003-2006). *Higher Education Statistics*. Canberra: DEST
- Keeves, J. P. (ed) (1990). *The IEA Study of Science III: Changes in Science Education and Achievement, 1970 to 1984*. Oxford: Pergamon.

- Lamb, S. and Bain, C. (2004) *Factors Affecting State and Territory Differences in Student Retention in Australia*, Melbourne: Queensland Department of Education and the Arts, Centre for Post-compulsory Education and Lifelong Learning, University of Melbourne.
- Lietz, P. (1995). Changes in Reading Comprehension across Cultures and Over Time. Unpublished thesis for the Degree of Doctor of Philosophy. The Flinders University of South Australia, School of Education.
- Lokan, J., Ford, P., Greenwood, L., (1996). *Maths and Science on the Line*. Australian Junior Secondary Students' Performance in the Third International Mathematics and Science Study (TIMSS). Camberwell, Vic: ACER.
- Marks, G. N., and Cresswell, J. (2005). State differences in achievement among secondary school students in Australia. *Australian Journal of Education*, 49(2), 141-151.
- Organisation for Economic Cooperation and Development (OECD) (2001). Lokan, J., Greenwood, L., Cresswell, J. (eds). *How Literate are Australia's Students? : The PISA 2000 Survey of Students' Reading, Mathematical, and Scientific Literacy Skills*. Melbourne: ACER.
- Organisation for Economic Cooperation and Development (OECD) (2004). Thomson, S., Cresswell J. and de Bortoli, L. (eds), *Facing the Future: A Focus on Mathematical Literacy among Australian 15-year-old Students in PISA 2003*. Melbourne: ACER.
- Ryan, C. and Watson, L., (2006). Why does year twelve retention differ between Australian States and Territories. *Australian Journal of Education*, 50(2), 203-218.
- Thomson, S. and Fleming N., (2004). *Examining the Evidence: Science Achievement in Australian Schools in TIMSS 2002 (TIMSS Australia Monograph no. 7)*. Melbourne: ACER
- Thomson, S. and Fleming N., (2004). *Summing it Up: Mathematics Achievement in Australian schools in TIMSS 2002 (TIMSS Australia Monograph no. 6)*. Melbourne: ACER.

The SACE Review panel's final report: Significant flaws in the analysis of statistical data

Kelvin Gregory

School of Education, Flinders University kelvin.gregory@flinders.edu.au

The South Australian Certificate of Education (SACE) is a credential and formal qualification within the Australian Qualifications Framework. A recent review of the SACE outlined a number of recommendations for significant changes to this certificate. These recommendations were the result of a process that began with the review panel "scrutinizing carefully [existing SACE structures for] continuing validity and effectiveness". This paper critiques the "careful examination" of statistical trends and patterns used to build the case for reform. Central to these trends and patterns are measures of retention, socio-economic status and student achievement, all of which are problematic. This paper also challenges the appropriateness of the statistical techniques used in the review. The paper concludes by arguing that making significant policy changes based upon such limited and flawed analyses is problematic.

Educational research, curriculum, education policy, post-compulsory education

INTRODUCTION

The South Australian Certificate of Education (SACE), introduced in 1992-93, is recognised as a credential and formal qualification within the Australian Qualifications Framework (Keightley and Keighley-James, 2001). SACE consists of two stages: Year 11 students typically complete Stage 1 and Year 12 students usually complete Stage 2. Offering in excess of 70 subjects over the two stages to largely post-compulsory education students, the SACE was recently reviewed by a three-person Review Panel (Crafter, Crook, and Reid, 2006). The substantive term of reference required the Review Panel to "achieve a curriculum and assessment framework that will meet the diverse needs of all students and result in high and more socially equitable levels of retention, completion and pathways beyond school" (Crafter et al., 2006, p. 9). The product of the review, a proposed new SACE, represents a substantial shift in "what counts as knowledge, the ways in which it is organised, who is empowered to teach it, [and] what counts as an appropriate display of having learned it" (Apple, 1993, p. 222).

Crafter et al. (2006) make a number of recommendations for the creation of a new SACE based upon principles, design concepts and features that are, they claim, flexible and responsive, credible, inclusive, connected, worthwhile, futures-orientated, and supportive of quality learning and teaching. For example, the Review Panel recommends the replacement of statistical moderation – the method used to adjust students' school-based assessment marks based upon external examination scores – with a method where "significant differences" between internal and external assessments will "signal the need for further discussion with the school and the teacher" and "this may result in adjustments to assessments" (Crafter et al., 2006, p. 132). This and other recommendations emerged from a process that began with the review panel "scrutinising carefully [existing SACE structures for] continuing validity and effectiveness" (Crafter et al., 2006, p. 9).

The Final Report is divided into three major sections: the case for reform, a new SACE within a learning space, and detailed reform proposals. The focus of this paper is the case for reform. In the Final Report, three chapters are used to present the case: current challenges, the case for reform - statistical trends and patterns, and the case for reform – community views. This paper examines the statistical trends and patterns that were used to build the case for reform. These trends and patterns are fundamental to the Review Panel’s case for reform and serve as a primary platform upon which it bases its recommendations.

The Review Panel used a “relatively small number of ‘key indicators’ [to] highlight some of the more significant trends and patterns in the participation and achievement of young people” (Crafter et al., 2006, p. 31). The trends and patterns identified in the review rely largely upon three measures: retention rates, socio-economic disadvantage, and achievement scores. The use of each measure is explored in detail in this paper.

FULL-TIME APPARENT RETENTION AND THE SACE REVIEW

Three overlapping conceptual definitions of early school leavers can be found in the literature (Dekkers and Claassen, 2001). First, early school leavers may be defined as those students who leave before the end of compulsory-aged schooling. Thus, for example, a South Australian student who leaves the education system before he or she is 16-years old would be classified as an early school leaver. South Australian students typically reach this age late in Year 10 or early in Year 11, with smaller numbers reaching that age in Years 9 and 12. Second, early school leavers may be defined as those students who leave without obtaining a certificate or diploma. Within the South Australian system, they would leave without having satisfactorily completed the requirements of the SACE certificate which are typically satisfied at the end of Year 12. The third conceptual approach views an early school leaver as a student who leaves school to take up employment. Under this conceptualisation, early leaving is problematic only if the leaver does not have the minimal levels of education and training necessary to enter the labour market (Hannan, Hovels, Berg, and White, 1995).

Crafter et al. (2006) used a certificate-based definition together with staying at school to the end of Year 12. They draw the South Australian Minister of Education’s attention to the apparently low SACE completion rate, thereby casting the discussion in terms of students leaving the secondary education system without the certificate. They also speak of retention in terms of students, defined as Year 8 or Year 10 cohorts, who stay at secondary school until the end of Year 12, typically one to two years beyond the end of compulsory schooling in South Australia. In adopting this approach, Crafter et al. (2006) are following the convention used by the Australian Bureau of Statistics (ABS). The ABS uses four age-based definitions of apparent retention, reflecting the imprecise nature of their indices. Adapted to South Australia, the four ABS definitions of apparent retention are:

- Apparent full-time retention is defined as the number of full-time students in Year 12, expressed as a percentage of the number who started secondary education in Year 8.
- Apparent full-time retention can be expressed as the number of full-time students in Year 12, expressed as a percentage of the number who started schooling in Year 10.
- Apparent all retention is defined as the number of full-time-equivalent students in Year 12 expressed as a percentage of the number of Year 8 students.
- Apparent all retention is defined as the number of full-time-equivalent students in Year 12 expressed as a percentage of the number of Year 10 students.

The ABS full-time retention rates, from Year 10 to Year 12, are shown in Table 1. Crafter et al. (2006) correctly state that the South Australia full-time retention rate is reasonably static and is the second-lowest rate of the eight regions monitored, although arguably the ACT and NSW figures are confounded by a number of factors including the movement of students from NSW to ACT. Crafter et al. (2006) use these low full-time retention rates for South Australia as a major plank upon which to build their argument for an overhaul of SACE.

Table 1. Apparent Full-Time Retention Rate, from Year 10 to Year 12 (Source: ABS Schools Australia, 2005, Cat. No. 4221.0)

Year	Aust.	ACT	NT	Tas	WA(b)	SA	Qld	Vic.	NSW
Government									
1998	69.4	110.0	62.4	62.3	67.6	64.2	73.0	73.7	64.8
1999	69.6	107.1	70.0	67.5	67.8	64.8	73.2	73.5	64.7
2000	69.6	105.0	69.9	71.6	67.3	61.9	73.9	74.4	64.2
2001	70.6	112.1	70.6	70.5	67.0	61.7	74.8	76.8	65.1
2002	72.2	101.0	73.1	75.3	69.7	61.9	76.5	77.5	67.4
2003	71.9	101.0	78.7	76.4	64.8	61.8	76.4	77.3	68.1
2004	72.2	100.8	90.8	76.5	66.7	62.9	75.0	77.2	68.6
2005	71.3	99.5	76.2	67.2	66.3	64.4	72.7	77.0	68.5
Non-government									
1998	83.4	68.6	54.8	69.4	80.3	85.2	86.8	88.3	80.5
1999	83.6	72.2	52.6	72.7	79.1	84.4	88.0	87.3	81.2
2000	83.6	65.2	43.9	71.6	80.2	84.1	87.8	88.3	81.2
2001	84.5	68.7	52.1	70.5	81.9	85.0	89.1	89.6	80.9
2002	85.9	75.2	49.8	74.1	82.1	86.9	89.8	91.5	82.1
2003	85.9	76.3	46.5	76.2	81.9	87.9	90.6	91.8	81.0
2004	86.1	72.6	43.1	75.9	82.4	87.7	91.5	91.9	81.3
2005	85.4	74.5	54.2	69.2	82.3	86.2	91.2	90.2	81.3
Total									
1998	74.1	79.4	60.4	64.2	71.8	71.2	77.7	79.1	69.8
1999	74.4	92.5	64.7	68.9	71.5	71.4	78.3	78.7	70
2000	74.4	88.7	62.2	71.6	71.6	69.5	78.7	79.7	69.8
2001	75.4	93.3	64.9	70.5	71.9	69.6	79.7	81.6	70.3
2002	77	89.8	66.2	75	73.9	70.6	81.1	82.9	72.4
2003	76.9	90.3	68.7	76.4	70.6	70.8	81.5	82.9	72.7
2004	77.2	88.4	75.2	76.3	72.4	71.6	80.8	83	73.2
2005	76.5	88.1	69.5	67.8	72.2	72.1	79.3	82.2	73.2

However, the focus on full-time students is misleading. South Australia has the highest number of part-time students of any state or territory (ABS, 2003). In 2002, 20.0 per cent of all South Australian Year 12 students were studying part-time (ABS, 2003). This is mainly due to the number of students who decide to work part-time and study part-time. It is also a reflection of study patterns emerging in the SACE itself. In some schools, it is relatively common for students to start their SACE studies in Year 10 and take a reduced load in Year 12, thus spreading out a two-year program over three years. Such students are technically part-time students in their final

year of secondary education, even though they are in effect fully engaged with SACE. For example, SSABSA reports that 3,597 students from independent schools fulfilled the requirements for entry into a South Australian university in 2005 (SSABSA 2005) and yet the ABS (Cat. No. 4221.0, Table 9, 2005) reports that there were only 2,947 full-time Year 12 students in those schools in this year. The ABS, aware of these and other patterns, issues the caution: “because of this pattern of education in SA, it is important to look at the all students [i.e., full-time-equivalent] retention rate as well as the full-time rate” (ABS, 2003). As shown in Table 2, when the full-time-equivalent retention rate is used, South Australia’s apparent retention rate is above the national average, and slightly smaller than Tasmania and Australian Capital Territory.

Table 2. Apparent Full-Time-Equivalent Retention Rates, from Years 10 to Year 12 (Source: ABS Schools Australia, 2005, Cat. No. 4221.0)

Year	Aust.	ACT	NT	Tas	WA	SA	Qld	Vic.	NSW
Government									
1998	74.4	110.4	82.2	87.2	73.3	85.3	73.2	76.4	68.4
1999	75.0	107.3	93.3	104.2	73.2	84.8	73.4	76.5	68.6
2000	75.3	105.2	79.9	102.1	71.8	84.1	76.5	77.3	68.1
2001	76.4	112.2	87.4	107.0	73.4	83.1	77.0	80.4	67.9
2002	78.5	101.3	85.9	119.7	74.2	86.4	79.8	81.2	70.1
2003	77.5	102.7	88.3	122.6	65.3	83.7	79.0	81.0	71.4
2004	77.6	101.8	99.7	125.9	68.3	86.1	77.0	80.9	71.6
2005	76.1	100.8	84.4	102.2	67.7	85.0	74.7	80.5	71.1
Non-Government									
1998	84.0	68.6	54.8	69.6	80.4	89.1	86.9	88.6	81.2
1999	84.1	72.2	55.2	72.9	79.2	87.6	88.1	87.7	81.7
2000	84.1	65.2	46.2	72.2	80.3	87.3	87.9	88.6	81.6
2001	85.0	68.7	53.8	71.2	81.9	88.5	89.2	89.8	81.4
2002	86.4	75.3	52.1	74.4	82.1	90.8	89.9	91.8	82.6
2003	86.5	76.4	48.7	75.6	81.9	92.8	90.8	92.0	81.6
2004	86.6	72.8	45.0	75.3	82.7	92.8	91.7	92.0	81.8
2005	86.0	75.6	54.8	69.3	82.4	91.0	91.4	90.4	81.7
Total									
1998	77.6	92.7	74.9	82.4	75.6	86.5	77.7	80.9	72.5
1999	78.1	92.6	82.0	95.7	75.2	85.7	78.2	80.7	72.8
2000	78.3	88.9	70.2	94.0	74.6	85.2	80.4	81.6	72.6
2001	79.4	93.3	77.3	97.0	76.2	84.9	81.2	84.0	72.4
2002	81.3	90.0	76.3	107.2	76.9	87.9	83.3	85.3	74.4
2003	80.7	91.3	76.4	109.4	70.9	86.8	83.1	85.3	74.9
2004	80.9	89.0	82.3	109.7	73.5	88.4	82.1	85.2	75.2
2005	79.8	89.3	75.5	92.4	73.1	87.2	80.6	84.4	75.0

The stark difference in the two retention rates can be seen in Figure 1 where the apparent full-time and full-time-equivalent retention rates are graphed for South Australia and Australia. Using the different retention rate indices, it is relatively easy to craft two very different arguments, with dramatically different implications for SACE. Based upon full-time retention rates, Crafter et al.

(2006) argue that it is apparent that many students are not completing Year 12 studies, and SACE is failing somewhat dismally to hold students at school. Conversely, using full-time-equivalent retention rates it could be argued that SACE is doing particularly well at enabling students to complete their education in a flexible fashion using part-time study.

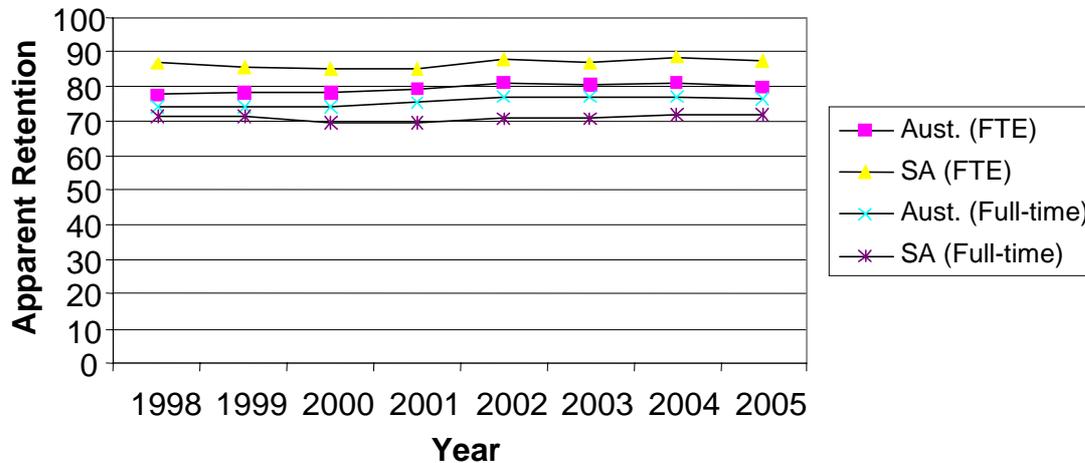


Figure 1. Apparent Full-time and Full-time-Equivalent Retention Rates from Year 10 to Year 12 for South Australia and Australia (Source: ABS School Australia 2005, Cat. No. 4221.0)

Crafter et al. (2006) are at least somewhat aware of the different stories available to them. Referring to the work of Lamb, Walstab, Teese, Vickers, and Rumberger (2004), they write:

When the retention rate is adjusted to include part-time students, the Years 8–12 apparent retention rate for South Australia rises by some 8 percentage points from the full-time rates shown above, to around 76 per cent, fifth highest in the nation and within 1–2 percentage points of the corresponding figure for Australia as a whole. This improvement in apparent retention reflects the large number of part-time students enrolled in Year 12 in South Australian government schools. (Crafter et al., 2006, p. 32)

However, they refer to the large number of part-time students seemingly as an after-thought. In the main body of the Final Report, Figures 1.2, 2.1, 2.2, 2.4, 2.15, and Table 1.2 are all based upon full-time students. Only two figures, 2.3 and 2.5, in the main body of the Final Report use full-time-equivalent apparent retention rates.

The Longitudinal Surveys of Australian Youth (LSAY) is a multi-wave study of cohorts that reached Year 12 typically in 1978, 1982, 1987, 1992, 1998, and 2001. Fullarton, Walker, Ainley, and Hillman (2003) using LSAY data reported Year 12 participation rates for South Australia in 2001 to be 74 per cent. A potential limitation with the analyses undertaken by Crafter et al. (2006), Lamb et al. (2004), and Fullarton et al. (2003) is that they exclude students who leave school for at least a year and then decide to re-enter the education system. It is probable that the South Australian re-entry program is most likely responsible for the high full-time-equivalent retention rates. However, a fundamental question needs to be asked: If Crafter et al. (2006) are aware of the problem with full-time retention rates, why were those figures used to build their argument for a revised SACE?

Chapter 1 of the Final Report is the leading chapter in the case for reform. It refers only to full-time retention rates and does not mention full-time-equivalent rates (see Crafter et al., 2006, Figure 1.2) even though the authors acknowledge “South Australia has the highest number and

percentage of part-time students in Year 12 in Australia” (p. 20). This chapter further compounds this line of reasoning by also presenting figures for people who are either engaged in full-time study or full-time work even though South Australia has traditionally had the largest number of people who both study and work part-time (see Crafter et al, 2006, Table 1.2). The Review Panel presented the bulk of their argument using full-time retention rates while at the same time acknowledging that one of the desirable aspects of the current SACE is that it has the flexibility to enable part-time study practices.

There is a substantial difference in retention rates across the school sectors in South Australia. Full-time and full-time-equivalent retention rates for non-government schools are consistently high (see Figure 2). For government schools, the full-time retention rates are typically between 60 and 65 per cent while the full-time-equivalent retention rates approach those of non-government schools and are often above 85 per cent. That being the case, it is apparent that the government schools are offering an attractive part-time study alternative that is meeting the needs of a large number of people. This is most likely due to the adult re-entry high schools strategically placed across the greater metropolitan area (Ramsay, 2004). As noted by Lamb et al. (2004):

South Australia’s Re-Entry High Schools provide the clearest example of a second chance system. These are for students who have been out of school for at least six months. The minimum age of most students is about 16 years, but most students are aged 18 years or more. Some re-entry students are at the Grade 8 level academically and have to do bridging courses in order to be re-integrated into the mainstream curriculum. The nature of SACE (being unitised and open) lends itself to part-time enrolment. The average high school discourages part-time enrolment, so a lot of ‘re-entry’ enrolments are part-time students (p. 81).

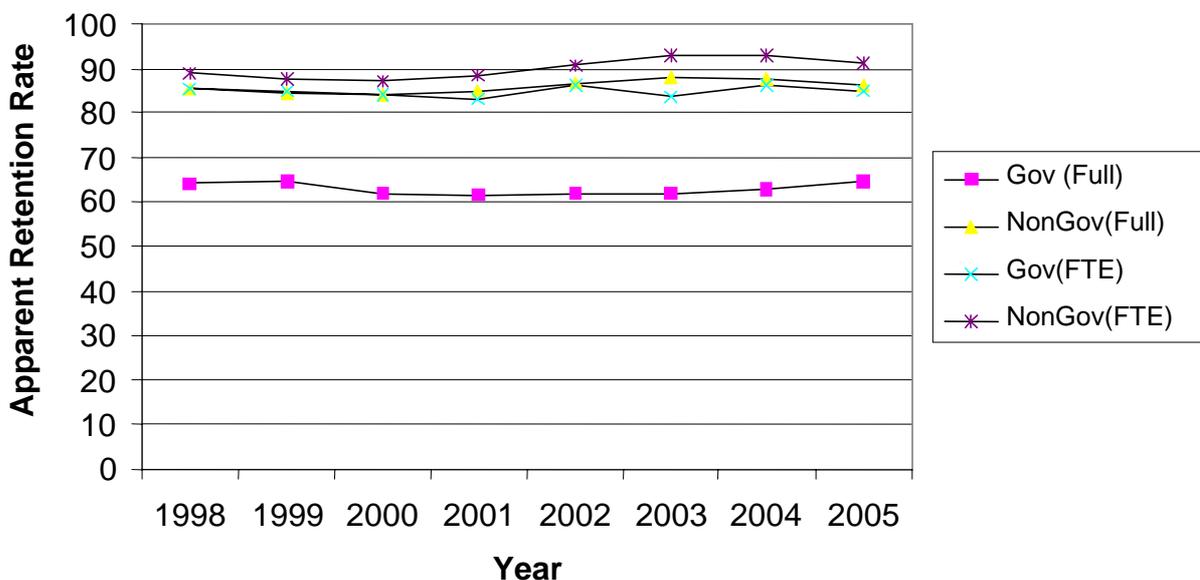


Figure 2. Apparent Full and Full-Time-Equivalent Retention Rates for South Australia by School Type (Source: ABS School Australia 2005, Cat. No. 4221.0)

The high full-time-equivalent retention rates in government schools certainly merit further exploration, starting with how retention rates are and should be calculated. Arguably, however, retention rates are a major problem for government schools and not for Catholic or Independent schools, and this problem is substantially addressed through re-entry schools.

COHORT DEFINITIONS AND THE SACE REVIEW

The retention rates reported by the ABS (2005, Cat. No. 4221.0) and Crafter et al. (2006) are additionally problematic due to the definition of the cohort being studied. A cohort is any group of people with a common classification or characteristic (Johnson and Christensen, 2004). Cohorts are often used in panel studies where the same individuals are studied at successive points over time. Strictly speaking, the 'student cohort' presented in the SACE Review Report is not a cohort for a number of reasons, some of which are acknowledged by Crafter et al. (2006). Students moving from one schooling system to another, adults re-entering the schooling system, younger school leavers returning, an influx of international students in SACE, and grade retention all point to the changing nature of the cohort at the school, sector, and state level. The grade-based approach used by Crafter et al. (2006) assumes (i) no grade retention and (ii) no net loss or gain of students from the school system. The first point is likely to be most problematic where schools implement a grade-promotion policy resulting in, for example, retention of Year 11 students due to low academic performance. The second point is related to the phenomenon of many students changing schools towards the end of their secondary education. Grade-based cohort calculations present an additional problem for SACE-type programs. Specifically, students who take two or more years to complete a full year of study impinge on the accuracy of the calculation and any meaningful interpretation of the statistic.

Crafter et al. (2006) did not utilise any precise or suitable definition of cohort, thereby making their report limited, flawed, and misleading. Exploring the SACE-retention issue using Year 8 as the initial cohort and a non-equivalent Year 12 cohort four years later (see Crafter et al., 2006, Figure 1.2) is misleading since approximately 3 percent of the Year 8 students will leave school before the end of Year 10 (ABS School Australia, 2005, cat. No. 4221.0; see also Crafter et al., 2006, Figure 2.1). The Year 10 cohort is a better indicator of student retention affected by SACE, but the progression of a student cohort would need to take into account the flexibility of the SACE. This flexibility means that SACE study can extend beyond the traditional Year 12 (see Crafter et al., 2006, Figure 2.5). Indeed, the flexibility of the present SACE makes it somewhat meaningless to talk about Year 11 and Year 12, especially when SACE study may commence in Year 10 and be completed beyond the traditional Year 12. Crafter et al. (2006) can be said to have 'manufactured a crisis' by essentially overlooking one of the most prominent features of the present SACE (see also Berliner and Bruce J. Biddle, 1996). Without careful research into why South Australian students are leaving school shortly after they reach the legal school leaving age, it is impossible to say how the present or any future SACE is related to early school leaving.

RESEARCH ON RETENTION

Much research has been conducted on early school leavers. Referring to the work of SSABSA (1999), Cormack (2004), and Lamb et al. (2004), Crafter et al. (2006) argue:

[T]he fact that the same pattern of withdrawal from the senior years of secondary schooling has been repeated each year for successive cohorts of students over an extended period of time suggests that systemic factors are operating to draw students away from full-time school education in the middle and senior years. (p. 37)

What is noteworthy here is the acknowledgement, for the first and only time in the report, of the importance of the middle-school years. A substantial body of research, national and international, points to the middle-school years as being the time when most students make the decision to leave school (de Vries, 1993; Finn, 1989; Rumberger, 1995). Indeed, some researchers report that students start thinking of leaving school as early as Grade 1 (Alexander, Entwistle, and Horsey, 1997). However, within the South Australian education system, they cannot legally do so until they are 16 years old. If South Australian students are making the decision to leave in the middle-

school years, then the curriculum source of the retention problem is much better framed as a South Australian Curriculum Standards and Accountability Frameworks (SACSA) or middle-school issue.

Students decide to leave for a variety of reasons (de Vries, 1993; Dekkers and Claassen, 2001). Push factors, generated within the education system itself, include lack of ability, boredom or irritation, cultural/social isolation and/or discrimination, drug abuse, and detention. For example, fewer than 50 percent of middle-school low achievers are likely to complete school while almost 90 percent of the very high achievers complete school (Marks and Ainley, 1997). Smyth, Hattam, Cannon, Edwards, Wilson, and Wurst (2000) showed that peer harassment is often a serious problem for at-risk students. Lamb et al. (2004) reported that some of the re-entering students were functioning at a Grade 8 level, indicating that there are systematic problems at the middle-school level and possibly earlier.

Students who leave school for push factors “have an aversion towards school or attach very little importance to it for their future lives” (Dekkers and Claassen, 2001, p. 344). Research by Smyth and Hattam (2001; 2002) and Smyth, McInerney and Hattam (2003) shows that schools can contribute to, or ameliorate, the push factors through their culture. Focusing on the middle years, they argue that there are three types of school cultures, only one of which has substantial holding power. Gibson and Bejinez (2002) couch this in terms of high-quality student-teacher relationships. Ainley and Sheret (1992) report that “students who achieve at lower levels can find school equally satisfying in terms of teacher-student relations, status, social integration, the relevance of the work which they undertake, and general satisfaction with school” (p. 72).

School culture research shows that the holding power of schools extends well beyond the formal, academic curriculum. There is mounting evidence that participation in school sporting programs increases retention (Davalos, Chavez, and Guardiola, 1999). In South Australia, most non-government schools have compulsory competitive inter-school sporting programs. Similar sporting programs in government schools have diminished over the past two decades. Other research shows that “high school dropout is more prevalent in schools with low morale than in those with high morale” (Vallerand, Fortier, and Guay, 1997, p. 1172).

Pull factors are attractive factors external to schools, and include training courses and employment. The high full-time retention rates of the early 1990s can be attributed partly to the absence of pull factors. As noted by Lamb et al. (2004):

Declines in available jobs (measured by job vacancies) adds to school retention, as do generally poor labour market conditions, though this also varies by state and territory. The effects are strongest in South Australia indicating that falls in labour market opportunities had a strong impact on the rate of retention. The results, like those reported by Ryan (2003) and Karmel (1995), suggest that general labour market conditions have a marked effect on retention with deteriorating conditions adding to retention. (p. 126)

McNeal (1999) reported that the type and intensity of part-time employment has a significant impact on student dropout. The suggestion is that students are in a position to choose the most attractive culture for their needs: work or school.

Crafter et al. (2006) see the high full-time retention rates of the 1990s as a target: “However, it is clear that the government’s goal of restoring retention rates to the levels attained in the early 1990s cannot be achieved by reform in the schooling sector alone. A broader set of policy responses is required.” (p. 33) That early 1990s high retention rate can be largely attributed to a global recession and a large decline in youth employment opportunities (Ryan and Watson, 2004), combined with the introduction of adult re-entry schools. While the government may seek

to achieve the same high full-time retention rates through a revised SACE, this seems unlikely without significant negative changes in the South Australian economy. Crafter et al. (2006) should have informed the government more fully of factors likely to mitigate restoring retention rates to previous highs. Simply put, there is no statistical evidence presented in the Final Report that shows that the present SACE is responsible for students leaving school early.

In a study of Dutch early leavers one year after they had left school, Dekkers and Claassen (2001) found that about half of the people had no regrets about their decision to leave early and approximately one-third admitted that it was not a sensible decision and they missed having a diploma. This latter group often left school because of push factors, while those who had no regrets left largely because of pull factors. Dekkers and Claassen (2001) characterise the Dutch school returnee as “often average students who were sometimes disruptive without having real behavioural problems” (p. 349). Enabling students who decide to leave school early to re-enter formal education at a later date may have significant motivational advantages. It would be worthwhile exploring the beliefs, attitudes, hopes, and aspirations of South Australian early school leavers using a longitudinal study design. Such a study would have been very useful in deciding which existing structures of the SACE support or mitigate students returning to school.

By focusing on the SACE curriculum and assessment factors, and using inappropriate retention rates, Crafter et al. (2006) have crafted a very weak, and seemingly misleading, case for reform. They should have drawn more fully upon studies by Lamb et al. who wrote that “Failure to establish meaning in the curriculum or to build satisfactory teaching relationships reduces the possibility of successful learning which is the most intrinsic motive for staying on at school” (Lamb et al, 2004, p. 10). Extending Lamb et al’s studies to take into account the influences of primary- and middle-school education on retention, Crafter et al. (2006) should have explored the early- and middle-school experiences of South Australian students, studying how these experiences impact on the SACE experience. Further, they should have recommended the implementation of quality-of-instructional-experience measures and systems to monitor students’ achievement patterns as they progress through the school system (c.f. Lamb et al, 2004).

RETENTION, TERTIARY ENTRANCE RANK AND ACADEMIC CREEP

Crafter et al. (2006) argue that if the academic curriculum was substantively changed, it would enable (or entice) students to complete Year 12. In particular, they recommend that the Tertiary Entrance Rank (TER) be separated from the SACE (see Recommendation 21 in the report). The problem here is that the causal link between early school leaving and examination-orientated subjects or even the SACE is not well established.

The argument from Crafter et al. (2006) basically assumes that there are inadequate curriculum provisions related to an ‘academic-dominated’ SACE curriculum. This is in spite of the large number of accredited SACE subjects from which students can choose. It is also in spite of the fact that Lamb and Vickers (2006) found that Year 12 non-completion rates “ranged from 28 per cent in schools where Vocational Education and Training (VET) counts towards the Year 12 certificate and there is a strong emphasis on workplace learning to 9 per cent in schools without any VET” (p. viii). Indeed, research indicates that schools with academically challenging curricula have substantially more holding power than schools with non-academically challenging curricula (Lee, Burkam, Chow-Hoy, Smerdon, and Gevert, 1998).

Crafter et al. (2006) state that “many respondents expressed concern that there had been a trend to make the content of subjects offered at Stage 2 in the SACE more abstract” (p. 62), and that the assessment requirements at Stage 2 had become more ‘academic’. What is unclear here is the processes used to make the subjects ‘more academic’. Marks, McMillan and Hillman (2001) report that South Australia has the lowest percentage of students of the Australian states receiving

a Tertiary Entrance Rank (see Table 4). South Australia also has the second lowest percentage of its population who have a bachelor degree or higher (only Tasmania is lower) (see Table 5). Given that New South Wales and Victoria have much higher full-time retention rates and also a higher proportion of their Year 12 graduation cohort earning university entry scores and successfully completing a foundational degree, surely an argument could be made to increase the academic thrust of the SACE?

If academic subjects equate to tertiary-entry subjects, then in South Australia it is not clear that these subjects are dominating the curriculum. Perhaps instead the middle- and high-school curricula in some schools are not especially suited to enabling students to make transitions between stages of education? Regardless of the reasons for state-level differences in the percentage of student obtaining a TER, Crafter et al. (2006) appear to be exhibiting a degree of academic cringe. Rather than making the secondary and tertiary sectors work together, the proposed new SACE seeks to split them even further apart (see Recommendation 24 in the report). It is difficult to envisage how the separation of the TER from the SACE will facilitate university entrance for groups at risk. Actively encouraging and facilitating university pathways, especially among under-represented groups, may be a superior strategy.

Table 4. Summary statistics for TER Scores, All Students and By Selected Jurisdiction (Source: Marks, McMillan, and Hillman 2001, p. 65)

Standard Statistics (Weighted)	All	NSW	Vic	Qld	SA
Mean (Standard error)	70.2 (0.5)	69.1 (1.0)	70.9 (0.9)	64.9 (1.2)	79.9 (1.0)
Median	73.8	71.1	72.0	70.0	81.5
Standard Deviation	19.8	22.5	19.5	24.1	10.0
Inter-Quartile Range	31.3	29.1	31.2	47.5	22.0
Percent of Sample with Score (Weighted)	All	NSW	Vic	Qld	SA
Of Year 9 Cohort	52.6	57.1	62.6	55.4	45.0
Of Year 12 Participants	68.0	73.0	76.8	70.5	59.4

Table 5. Level of highest educational attainment as percentage of State total, 2005 (Source: ABS Education and Work, 2005, Cat. No. 6227.0).

State	Year 10 and below	Year 11 to Year 12	Cert. to Adv. Dip.	Bachelors or above	Total
New South Wales	29.5	24.6	23.3	21.2	100.0
Victoria	23.0	32.0	22.7	21.0	100.0
Queensland	28.7	27.8	25.8	16.6	100.0
Western Australia	26.8	28.1	25.4	18.4	100.0
South Australia	23.9	34.9	23.5	15.7	100.0
Tasmania	39.0	21.3	23.0	15.3	100.0
Northern Territory	22.4	30.1	28.0	18.1	100.0
Australian Capital Territory	17.5	29.7	18.4	32.6	100.0
Australia	27.0	28.3	23.8	19.6	100.0

FULL-TIME RETENTION INDICES AND POSSIBLE RESEARCH

The ABS apparent-full-time-retention-rate index is not suited to the purpose of the SACE review. Firstly, it is an 'all or nothing' index. That is, it does not take into account that completion of the SACE is an incremental task, with many students choosing to spread the task over three or more

years. Second, students can decide to leave school for a number of reasons, including taking up apprenticeships. Since some of these reasons can and should be seen in a positive light, both from student and societal perspectives, the interpretation of the full-time-retention-rate index will always remain problematic. Unless reasons for leaving are classified and incorporated into this index, such difficulties will remain and it will implicitly convey the understanding that leaving school for an apprenticeship or employment in the Australian Defence Forces is not seen as worthwhile. The full-time-retention-rate index used by the SACE Review Panel implies that formal, full-time school-based education is the only valid education. While this is in direct contradiction to the views put forward in other parts of the Report, the fact that Crafter et al. (2006) present major statistics and arguments based upon this index is highly problematic. A more effective approach may be a longitudinal school-retention analysis that uses individual student data, tracking them over time and school-type. Statistical techniques for such studies are well established but appear not to have been used in South Australia to date.

The superficial analysis of the retention research by Crafter et al. (2006) does not do justice to the complexity of student-retention issues in South Australia. Since Catholic schools account for the majority of the non-government schools in South Australia, it would be worthwhile comparing the holding power of Catholic and government schools. Such analyses should take into account the nature of the family background, curricula, school culture and other variables. A fundamental question would be: Do Catholic and government schools with similar intakes have different retention patterns? If so why? The initial analysis would be largely statistical, while the follow-up question would almost certainly benefit from school-based research that incorporated micro-level analyses.

SOCIO-ECONOMIC STATUS AND THE SACE REVIEW

Socio-economic status (SES) is often interpreted as a proxy for the quality of the home learning situation (Raymond and Hanushek, 2003). SES is usually conceptualised as an attribute of an individual (or the person's family or household) that consists of different dimensions. Interest in SES stems in part from class-orientated research that "shows class as life condition is a powerful determinant of all kinds of outcomes" (Sorensen, 1996, p. 1538). While some researchers fuse social and economic status, the terms are not synonymous (Williams, Williams, Kastberg, and Jocelyn, 2005). Wright (2002) reported that Weber centred his class analyses on life chances while Marx rooted his work in the problem of exploitation. Weber (1978) defined social status as "an effective claim to social esteem in terms of negative or positive privilege" (p. 305). Weber (1978) also held that differential access to goods and opportunities for income is a defining component of economic class

Socio-economic background, and its relationship to achievement, has been subjected to much research. A basic premise of these studies is that "schooling could be said to be fair if there is no impact of a student's socio-economic background" on achievement and post-secondary education (Marks et al., 2001, p. 58).

SES is often measured using objective criteria (Weiss and Fershtman, 1998). The SES index used by Crafter et al. (2006) is the ABS index of relative socio-economic disadvantage. This is the most general of the ABS indices, the others being the urban index of advantage, the rural index of advantage, the index of economic resources, and the index of education and occupation (Trewin, 2001; 2002). The index of relative socio-economic disadvantage includes "all the available variables that either reflect or measure disadvantage" (Trewin, 2001, 2004, p. 1). The index components, shown in Table 6, include income and employment-status variables, and a race variable, the percentage of Indigenous Australians in the area. Thus, being Indigenous, and according to this index having too many Indigenous Australians in an area, is a disadvantage. While it may be that institutional racism is a very important social mechanism, there is nothing

innately inferior or superior about being Indigenous, English, Irish, Italian or Chinese. And if there are institutional mechanisms at play, then these should be documented in the formulation of the index.

There are other concerns with the use of this index. For example, Williams et al. (2005) report that social status, and not economic status or some combination of the two components, is the stronger predictor of achievement. Another interpretive problem with the index is that “while the index may reflect an area’s disadvantage, it is not possible to say what aspects of disadvantage are being represented” (Trewin, 2004, p. 1). In census districts where there are pockets of advantage and disadvantage, the “pockets of advantage will not offset the pockets of disadvantage” and “low disadvantage does not equate to high advantage” (Trewin, 2004, p. 72). Trewin (2004) advises users looking for measures of advantage/disadvantage to use the other indices “depending on whether the user wants general advantage/disadvantage; economic advantage/disadvantage; or education and occupation advantage/disadvantage” (p. 72). The ABS index of relative socio-economic disadvantage incorporates the so-called ‘objective measures’ of social and economic status but can say little about the subjective evaluation of actions and traits at, for example, the school or class level. For example, economic class at the small group level shows “not a hierarchical totem pole of classes neatly stacked up on one another, but overlapping transactional circuits of vastly different scope and content” (Collins, 2000, p. 24).

Table 6. List of variables in ABS Index of Relative Socio-economic Disadvantage (Source: Trewin 2004)

1	% Persons aged 15 years and over with no qualifications
2	% Families with offspring having parental income less than \$15,600
3	% Females (in Labour Force) unemployed
4	% Males (in Labour Force) unemployed
5	% Employed Males classified as 'Labourers and Related Workers'
6	% Employed Females classified as 'Labourers and Related Workers'
7	% One-parent families with dependent offspring only
8	% Persons aged 15 years and over who left school at Year 10 or lower
9	% Employed Males classified as 'Intermediate Production and Transport Workers'
10	% Families with income less than \$15,600
11	% Households Renting (Government Authority)
12	% Persons aged 15 years and over separated or divorced
13	% Dwellings with no motor car at dwelling
14	% Employed Females classified as 'Intermediate Production and Transport Workers'
15	% Persons aged 15 years and over who did not go to school
16	% Indigenous
17	% Lacking fluency in English
18	% Employed Females classified as 'Elementary Clerical, Sales and Service Workers'
19	% Occupied private dwellings with two or more families
20	% Employed Males classified as 'Tradespersons'

Crafter et al. (2006) used the ABS index of relative socio-economic disadvantage, aggregated it to the local government area (LGA) level, and applied it to the location of school. They reported the correlation between full-time retention rates and socio-economic disadvantage in a graph, with the points on the graph indicating LGA (see Figure 3). They shaded in an area of the graph that excluded two LGA’s with above 100 per cent retention rates (Adelaide and Norwood). Acknowledging that “student movement across municipal boundaries distorts these geographical patterns” (p. 34), they claimed that there is a “strong, positive correlation between retention and socio-economic status [of where the school is located] in the metropolitan area” (p. 34).

The unweighted Pearson correlation coefficient between the LGAs and retention rates (excluding Adelaide and Norwood) is 0.80. However, when Adelaide and Norwood are included in the calculation, the unweighted coefficient drops to 0.65. Thus, the SES index apparently accounts for 64 percent of the variation in full-time retention if Adelaide and Norwood are excluded, but only 42 percent if they are included. The exclusion of Adelaide and Norwood without explanation and the use of apparent full-time retention rate is consistent with data-torturing methods. Data torturing involves manipulating the information in a variety of ways until the desired claim is established.

LGAs are heterogeneous in terms of SES indicators. For example, the Port-Enfield LGA includes Port Adelaide (medium status), Osborne (low), Outer Harbor (high), Rosewater (low), and Semaphore (medium). So, while the Port-Enfield LGA has a medium overall SES, it is heterogeneous. The clustered, heterogeneous nature of the data distorts the correlation between SES and retention.

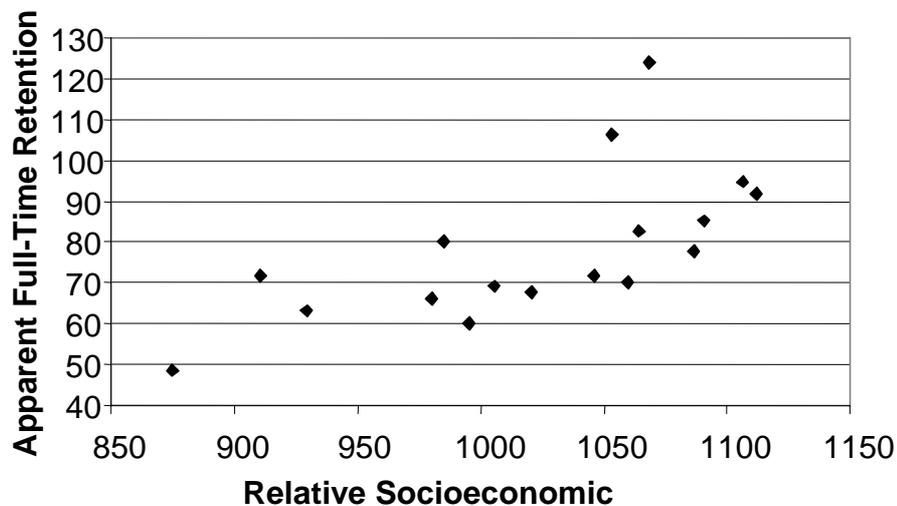


Figure 3. Apparent retention rates, years 10 to 12, fulltime by socio-economic status of local government area and school location (Source: Crafter et al., 2006, Figure 2.2)

To illustrate the problem, consider a simulation study using 10 LGAs, each with 10 suburbs. For this study, the correlation between SES and retention rate was 0.84, marginally higher than that reported by Crafter et al. (2006). The graph for the simulated data is shown in Figure 4 and reflects the strong positive correlation. However, when the 10 local government areas are disaggregated, the correlation coefficient is 0.58. The scatter plot of the 100 simulated suburbs is shown in Figure 5. Bearing in mind that these two graphs (i.e., Figures 4 and 5) are based upon the same simulated data, it is readily apparent that different levels of aggregation provide somewhat different answers. The relationship between SES and retention rates would be expected to change again if we were to repeat the simulation using, for example, cohort or suburb block data. The problem with misleading correlations stemming from aggregated data has been known in education research since the Coleman report (Coleman et al., 1966) and is the major reason for the prevalence of multilevel-modelling techniques in statistical research today (Bryk and Raudenbush, 1992). Win and Miller (2005) recognised this analytical problem, saying that patterns between SES and achievement become distorted when the data are analysed at the aggregate level. Thus, the SES analyses presented by Crafter et al. (2006) are highly problematic.

The local government areas are used to zone some schools and not others. Typically, students are expected to attend their local government school unless they can mount a case for attending one of several magnet government schools. Magnet schools are government schools offering specific

programs for students with, for example, high intellectual or musical potential. However, non-government schools are not generally limited to a specific district and it is common for this school type to draw students from across several LGAs. For example, the LGA of Adelaide with its high apparent retention rate has six non-government schools, several of which offer only Year 11 and 12 education. These centralised, mainly non-government, schools draw students from many LGAs, with some students travelling well over 20 kilometres to attend a school. Correlating LGA SES with retention rates or achievement is therefore misleading, since the LGA of the school and the student do not always concur.

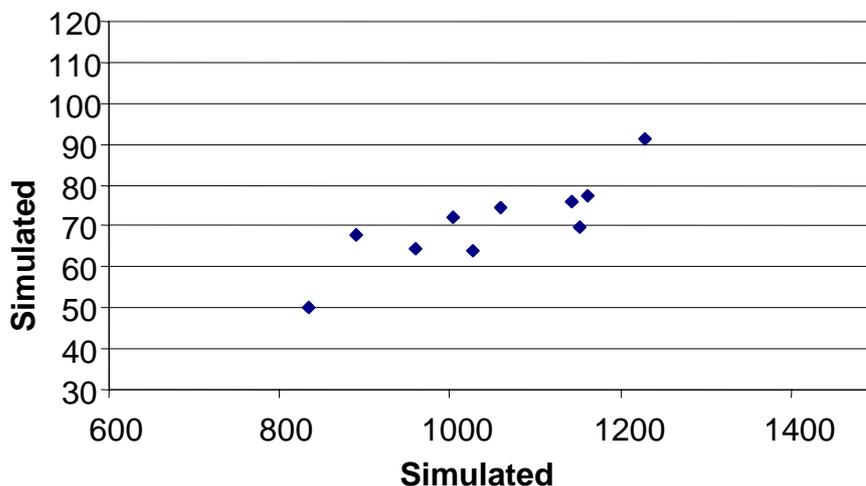


Figure 4. Simulated apparent full-time retention rates and socio-economic status for ten local government areas ($r = 0.84$)

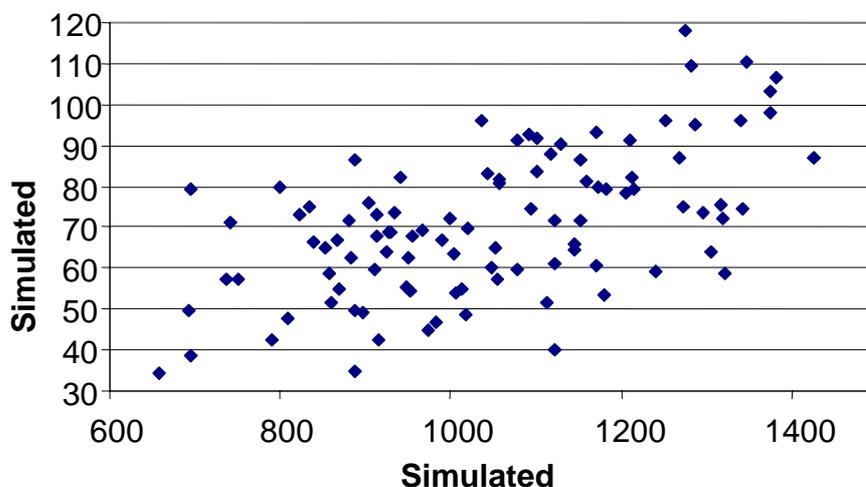


Figure 5. Simulated apparent full-time retention rates and socio-economic status for one hundred suburbs contained in ten local government areas ($r = 0.58$)

International students are unlikely to be evenly spread across the education system. But a question, unanswered by the Review, is how these students are distributed. Their distribution will affect the apparent retention rates. While it is likely that international students will artificially raise the retention rate in some schools, this simply highlights the fact that retention rates and relationships between retention rates and SES, as presently calculated, are an insufficient basis for policy decisions.

In relating full-time retention rates to SES, Crafter et al. (2006) are arguing that dropping out is a SES problem (see also Hansen, Fisherkeller, and Johnson, 1995). This is unfortunate for at least

three reasons. First, there has been considerable evidence to date that educational outcomes and SES are related to at least some degree in every country participating in international assessments in the past 40 years (Martin, Mullis, Gregory, Hoyle, and Ce, 2000). That is, regardless of the curriculum, education system, or society, the link remains, albeit in varying strengths. Even those countries that have policies designed to make schools 'equal' have a strong relationship between SES and achievement at the student level. There seems to be little support for the notion that the SES-achievement relationship will disappear.

Second, correlations between variables are not enough since "policy cannot be intelligently conducted without an understanding of the mechanisms" (Deaton, 2002, p. 15). SES might cause higher educational achievement, education achievement may cause SES, or both might be correlated with other factors; indeed, all three possibilities might be operating simultaneously. If retention and educational attainment is affected by income, then education inequality may be best addressed by income-support schemes for the poor (Deaton 2002). Simply redistributing wealth, however, is likely to be problematic, not the least since gains by the poor will be offset by losses by the rich. If income is what matters for education, then its redistribution will only improve educational attainment if additional income has a lesser effect on education among the rich than among the poor (Deaton, 2002). However, any policy would need to recognise that most of the variation in achievement and retention is likely to occur within a social or economic class, and not between classes. Thus, policy aimed at increasing retention or attainment should ideally be aimed at students at risk, not at particular social or economic groups.

Third, even if the correlation between retention rate and SES can be interpreted as a causal relationship, it is by no means certain that changing the curriculum will address the supposed retention-rate problem. Power (1984), reporting on a South Australian study examining contributing factors to above-average school retention rates, questioned the extent to which curriculum reform can lead to significant changes in retention rates. Indeed, given the high rate of part-time students in the government school sector, it appears that the present SACE curriculum is doing remarkably well in addressing the retention issue. It may be that a number of students are deciding to leave school for a short period, and then re-entering the system on a part-time, adult basis. Given the high apparent retention rates in Adelaide and Norwood, it would seem pertinent to conduct a study exploring the reasons why students seek an education outside their LGA, the degree of contentment with the decision, and the consequences of that decision.

COMPLETION RATES AND THE SACE REVIEW

Crafter et al. (2006) report that SACE completion rates appear "to have plateaued at a little over 11 000 students a year" (p. 44). According to the accompanying graph in their Final Report (Figure 2.11), this represents, in 2003, 55.5 per cent of the Year 8 enrolments. Obviously, the method of calculation becomes important since they also report that 1994 and 1995 completion rates were 56.8 per cent and 56.6 per cent, respectively, whereas SSABSA reported "there was a substantial increase in the average SACE completion rate, from 63.3 per cent in 1993 to 76.4 per cent in 1994, and to 79.9 per cent in 1995" (SSABSA, 1999, p. 35). The respective completion rates that SSABSA reports for 2002, 2003, and 2004 are 86.1, 86.1, 87.5 per cent, respectively (SSABSA, 2005). The SSABSA rates are computed based upon the number of students entering SACE. That same SSABSA report notes that there are many reasons why students do not complete SACE. While the authors report low return rates for the questionnaire sent to students who did not complete SACE, there appears to be at least three clusters of reasons for not completing SACE. Reasons that were related more or less directly to the SACE curriculum, but may also be related to school curriculum structures included: (1) Subjects offered were not relevant, (2) Not enough interesting subjects, and (3) Not enough subjects to choose from. Other reasons were more directly related to the school's culture, such as (1) Teachers did not treat

students fairly, (2) Did not like school, (3) Did not like teachers, and (4) Did not like school discipline. Other reasons more related to employment included: (1) Wanted to look for a job, (2) Started a TAFE course, and (3) Had a job. It is obvious that only some of the reasons for non-completion are likely to be addressed by curriculum and assessment changes in SACE.

AVERAGE PUBLICLY-EXAMINED-SUBJECT SCORE AND STATISTICAL LOCAL AREA

Crafter et al. (2006) report that students' average scores in publicly examined subjects (PES) vary according to Statistical Local Area (SLA). SLAs are based on the boundaries of incorporated bodies of local governments where they exist. Crafter et al. (2006) state that higher scores are associated with parents being engaged in employment in managerial/administrative and professional occupations, female participation in workforce, and high family income. Similar findings have been reported in a large number of countries. This gives rise to the question of how the new SACE will change this. Further, what other variables are correlated with achievement? If teachers and schools make a difference in the education of students, then surely teacher and school variables will be related to achievement? That Crafter et al. (2006) do not present analyses using teacher and school variables may be interpreted as a tacit suggestion that teachers and school have no impact on student achievement. They claim "a range of academic and socioeconomic factors operate to produce a large degree of social differentiation in school leavers' access to higher education" (Crafter et al., 2006, p. 46). Such a statement calls for a comprehensive explanation of how academic and socioeconomic factors determine achievement and access to higher education (see Cook and Campbell, 1979, p.32).

While not forgetting that many students move across areas to attend school, the computation of an average score without an accompanying standard error of measurement is highly problematic. There is simply no way of determining from the Final Report if any difference between regions is statistically significant or not. This is apart from the question of whether it is psychometrically appropriate to calculate means on essentially criterion-based ranks. A calculation of a mean assumes that a score of 8 out of 20 carries the same meaning across all subjects, and that the difference between 8 and 9 is substantively the same as 14 and 15. There is no evidence that this is the case. The calculation of mean scores across subjects are likely to be even more problematic given the large number of part-time students. For example, if a student spreads her studies over three years, what procedures are in place to ensure that an 18 in a subject carries the same meaning across those three years?

CONCLUSIONS

The Review Panel appears to have focused rather narrowly on its mandate "To achieve a curriculum and assessment framework that will meet the diverse needs of all students and result in high and more socially equitable levels of retention, completion and pathways beyond school" (p. 9). It has, for example, failed to explore the reasons why students move schools at the end of Year 10 that is evident in the growth of Years 11 and 12 in Adelaide's private schools. It has failed to fully examine what keeps students at school, instead focusing narrowly upon two possible explanatory variables: SES and the so-called academic curriculum.

The Pareto criterion applied to SACE is that the change from the present SACE to that recommended by the Review Panel will make at least one individual better off without making any other individual worse off. In their desire to make SACE more equitable they have largely ignored the successful student, and have instead exhibited a degree of academic cringe. Clearly, Crafter et al. (2006) have failed to satisfy the Pareto criterion. Another way of evaluating the SACE Review is to utilise Social Choice Theory. Following the work of Sen (1993, 1995, 1999), social choice decisions should be based upon access to advantage, for example access to tertiary

education. But it is not clear how the proposed new SACE, based upon insufficient and inadequate research, can deliver this.

The SACE review panel did not build a sound case for its recommendations. South Australia has a high apparent full-time-equivalent retention rate, much higher than the apparent full-time retention rate. Given that SACE is designed to be flexible, something acknowledged by the Review Panel, it is incredulous that the panel then chose to build their case largely on full-time retention rates. Such an approach leaves them open to the charge of data torturing (Mills, 1993). Further, it is widely known that differences in achievement between schools can be attributed to a myriad of factors, extending well beyond socio-economic class and school location. For example, the Review Panel overlooked the difference in teacher experience that is apparent between South Australian regions. Another variable that may be important, but also overlooked, was whether service on SSABSA panels provides teachers with information not available to others. The statistical analyses presented in the report offer simple causal-effect relationships using aggregated data. Such relationships are largely inappropriate to education (Olson, 2004). As noted by Sadovnik and Semel (2001) "Over four decades of sociological research on the educational achievement of low-income children indicate that there is no one causal factor that explains academic underachievement, nor easy solutions to the problem" (p. 30).

Educational research, like education, has a moral imperative. As education researchers, "we have a particular obligation and opportunity to take a leading role in seeing that the research that is done is truly good research" (Hostetler, 2005, p. 21). To allow, facilitate and enable the development and implementation of policies based upon naïve, simplistic, incorrect, or inaccurate research is a clear violation of that imperative. The SACE Review Panel should have avoided one of the cardinal sins of statistical analysis: the tendency of "summary statistics to ... construct distorted and misleading pictures" is well known as the 'ecological fallacy' (Connolly, 2006, p. 236; Troyna, 1984). The Review Panel's use of aggregated retention, SES and achievement data is ultimately a fine example of how not to analyse educational data. That their statistical case for reform is substantively flawed suggests that the recommendations contained in the report should be treated with caution.

REFERENCES

- Ainley, J., and Sheret, M. (1992). *Progress through school: A Study of Senior Secondary Schooling in New South Wales*. Camberwell, Victoria: Australian Council for Educational Research.
- Alexander, K. L., Entwistle, D. R., and Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of Education*, 70(2), 87-107.
- Apple, M. W. (1993). The politics of official knowledge: Does a national curriculum make sense? *Teachers College Record*, 95(2), 222-241.
- Berliner, D. C., and Bruce J. Biddle, B. J. (1996). Making molehills out of molehills: Reply to Lawrence Stedman's review of the manufactured crisis [Electronic Version]. *Education Policy Analysis Archives*, 4. Retrieved 28 May 2006 from <http://epaa.asu.edu/epaa/v4n3.html>.
- Bryk, A. S., and Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage Publications.
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., et al. (1966). *Equality of Educational Opportunity*. Washington, D.C.: U.S. Government Printing Office.
- Collins, R. (2000). Situational Stratification: A Micro-Macro Theory of Inequality. *Sociological Theory*, 18(1), 17-43.

- Connolly, P. (2006). Summary statistics, educational achievement gaps and the ecological fallacy. *Oxford Review of Education*, 32(2), 235-252.
- Cormack, P. (2004). The students at risk of not completing the SACE (STAR 3) project: Final report. Retrieved 30 April 2006, from <http://www.ssabsa.sa.edu.au/research/star3.pdf>
- Crafter, G., Crook, P., and Reid, A. (2006). *Success for All: Ministerial Review of Senior Secondary Education in South Australia*. Adelaide: Government of South Australia.
- Davalos, D. B., Chavez, E. L., and Guardiola, R. J. (1999). The effects of extracurricular activity, ethnic identification, and perception of school on student dropout rates. *Hispanic Journal of Behavioral Sciences*, 21(1), 61-77.
- de Vries, G. (1993). *Het pedagogisch regiem. [The pedagogical regime.]*. Amsterdam Meulenhof.
- Deaton, A. (2002). Policy Implications of the Gradient of Health and Wealth. *Health Affairs*, 21(2), 13-30.
- Dekkers, H., and Claassen, A. (2001). Dropouts – Disadvantaged by definition? A study of the perspectives of very early school leavers. *Studies in Educational Evaluation*, 27, 341-354.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59(2), 117-142.
- Fullarton, S., Walker, M., Ainley, J., and Hillman, K. (2003). *Patterns of Participation in Year 12*. Camberwell, Victoria: Australian Council for Educational Research.
- Gibson, M. A., and Bejinez, L. F. (2002). Dropout Prevention: How Migrant Education Supports Mexican Youth. *Journal of Latinos and Education*, 1(3), 155-175.
- Hannan, D., Hovels, B., Berg, S. v. d., and White, M. (1995). Early leavers from Education and Training in Ireland, the Netherlands, and the United Kingdom. *European Journal of Education*, 30(325-346).
- Hansen, D. A., Fisherkeller, J., and Johnson, V. A. (1995). The hidden persistence of immigrant 'dropouts': Distortions, blank spots and blind spots in research on schooling careers. *International Journal of Educational Research*, 23(1), 83-105.
- Hostetler, K. (2005). What Is "Good" Educational Research? *Educational Researcher*, 34(6), 16-21.
- Johnson, B., and Christensen, L. (2004). *Educational Research: Quantitative, Qualitative, and Mixed Approaches* (Second ed.). Boston: Pearson.
- Keightley, J., and Keighley-James, D. (2001). *Negotiating Multiple Interests in High-stakes Assessment: Getting Inside Construct Validity*. Wayville, SA: SSABSA.
- Lamb, S., and Vickers, M. (2006). *Variations in VET Provision Across Australian Schools and their Effects on Student Outcomes*. Camberwell, Victoria: Australian Council for Educational Research.
- Lamb, S., Walstab, A., Teese, R., Vickers, M., and Rumberger, R. (2004). *Staying on at School: Improving Student Retention in Australia*. Report for the Queensland Department of Education and the Arts: Centre for Post-compulsory Education and Lifelong Learning, The University of Melbourne.
- Lee, V. E., Burkam, D. T., Chow-Hoy, T., Smerdon, B. A., and Gevert, D. (1998). *High School Curriculum Structure: Effects on Course Taking and Achievement in Mathematics for High School Graduates*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.
- Marks, G. N., and Ainley, J. (1997). *Reading Comprehension and Numeracy Among Junior Secondary School Students in Australia*. Melbourne: ACER.
- Marks, G. N., McMillan, J., and Hillman, K. (2001). *Tertiary Entrance Performance: The Role of Student Background and School Factors*. Camberwell, Victoria: Australian Council for Educational Research.

- Martin, M. O., Mullis, I. V. S., Gregory, K. D., Hoyle, C., and Ce, S. (2000). *Effective schools in science and mathematics: IEA's Third International Mathematics and Science Study*. Chestnut Hill, MA: TIMSS International Study Center, Boston College.
- McNeal, R. B. (1999). Parental involvement as social capital: Differential effectiveness on science achievement, truancy, and dropping out. *Social Forces*, 78, 117-144.
- Mills, J. (1993). Data Torturing. *The New England Journal of Medicine*, 329, 1196-1199.
- Olson, D. R. (2004). The triumph of hope over experience in the search for "What Works": A response to Slavin. *Educational Researcher*, 33(1), 24-26.
- Power, C. (1984). Factors Influencing Retentivity and Satisfaction with Secondary Schooling. *Australian Journal of Education*, 28(2), 115-125.
- Ramsay, E. (2004). *A New Pathway for Adult Learners: Evaluation of a School-University Access Pilot*. Adelaide: University of South Australia.
- Raymond, M. E., and Hanushek, E. A. (2003). *Shopping for Evidence against School Accountability*.
- Rumberger, R. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal*, 32, 583-625.
- Ryan, C., and Watson, L. (2004). Year 12 Completion and Retention in Australia in the 1990s. *Australian Journal of Labour Economics*, 7(4), 481-500.
- Sadovnik, A. R., and Semel, S. F. (2001). Urban school improvement: A challenge to simplistic solutions to educational reform. *Educational Researcher*, 30(9), 27-32.
- Sen, A. (1993). Capability and well-being. In M. C. Nussbaum and A. Sen (Eds.), *The Quality of Life*. New York: Oxford University Press.
- Sen, A. (1995). Gender inequality and theories of justice. In M. C. Nussbaum and J. Glover (Eds.), *Women, Culture, and Development: A Study of Human Capabilities* (pp. 259-273). New York: Oxford University Press.
- Sen, A. (1999). *Development as Freedom*. New York: Knopf Publishers.
- Senior Secondary Assessment Board of South Australia. (2005). *Annual Report*. Wayville, S.A.: SSABSA.
- Senior Secondary Assessment Board of South Australia. (1999). Leaving School Early Without Credentials. Retrieved 25 May, 2006, from www.ssabsa.sa.edu.au/docs/ssabsadocs/synopsis.pdf
- Senior Secondary Assessment Board of South Australia. (2005). SSABSA Data Information Release. Retrieved 25 May, 2006, from www.ssabsa.sa.edu.au/research/datarelease/datarelease08.pdf
- Smyth, J., and Hattam, R. (2001). 'Voiced' research as a sociology for understanding 'Dropping Out' of school. *British Journal of Sociology of Education*, 22(401-415).
- Smyth, J., and Hattam, R. (2002). Early school leaving and the cultural geography of high schools. *British Educational Research Journal*, 28, 375-397.
- Smyth, J., Hattam, R., Cannon, J., Edwards, J., Wilson, N., and Wurst, S. (2000). *Listen to Me, I'm Leaving: Early School Leaving in South Australian Secondary Schools*. Adelaide: Flinders Institute for the Study of Teaching.
- Smyth, J., McInerney, P., and Hattam, R. (2003). Tackling school leaving at its source: a case of reform in the middle years of schooling. *British Journal of Sociology of Education*, 24(2), 177-193.
- Sorensen, A. (1996). The structural basis of social inequality. *American Journal of Sociology*, 101, 1333-1365.

- Trewin, D. (2001). *Measuring Wellbeing: Frameworks for Australian Social Statistics*. Canberra: Australian Bureau of Statistics.
- Trewin, D. (2002). *General Social Survey: Summary Results*. Canberra: Australian Bureau of Statistics.
- Trewin, D. (2004). *Technical paper: Census of Population and Housing*. Canberra: Australian Bureau of Statistics.
- Troyna, B. (1984). Fact or artifact? The 'educational underachievement' of black pupils. *British Journal of Sociology of Education*, 5, 153-166.
- Vallerand, R. J., Fortier, M. S., and Guay, F. (1997). Self-Determination and Persistence in a Real-Life Setting: Toward a Motivational Model of High School Dropout. *Journal of Personality and Social Psychology*, 72(5), 1161-1176.
- Weber, M. (1978). *Economy and Society*. Berkeley, CA: University of California Press.
- Weiss, Y., and Fershtman, C. (1998). Social status and economic performance: A survey. *European Economic Review*, 42(3-5), 801-820.
- Williams, T., Williams, K., Kastberg, D., and Jocelyn, L. (2005). Achievement and affect in OECD nations. *Oxford Review of Education*, 31(4), 517-545.
- Win, R., and Miller, P. W. (2005). The effects of individual and school factors on university students' academic performance. *The Australian Economic Review*, 38(1), 1-18.
- Wright, E. O. (2002). The shadow of exploitation in Weber's class analysis. *American Sociological Review*, 67(6), 832-853.

A critique of the SACE Review panel's report on community views

Kelvin Gregory

School of Education, Flinders University kelvin.gregory@flinders.edu.au

The South Australian Certificate of Education (SACE), introduced in 1992-93, is a credential and formal qualification within the Australian Qualifications Framework (AQF). SACE was recently subjected to a review that led to a series of significant recommendations. These recommendations came out of a process that began with the Review Panel scrutinising existing SACE structures for continuing validity and effectiveness. This paper critically examines claims made by the Review Panel of a resounding confirmation of the need for reform. Since the panel's claims are built upon qualitative data (community submissions), they are critiqued using widely-accepted standards for qualitative research. In particular, this paper examines the panel's evidence regarding "academic creep", the dominance of the academic pathway, and issues regarding the Tertiary Entrance Rank. The findings suggest that the panel's case for reform may apply more to government schools than to the SACE itself. This paper concludes that the case for reform is poorly developed and largely supported by research lacking transparency and unsuited to making generalisations.

Qualitative research, curriculum, education policy, post-compulsory education

INTRODUCTION

The Senior Secondary Assessment Board of South Australia (SSABSA), an independent statutory body of the South Australian Government, provides "curriculum, assessment, reporting, and certification services to the students of South Australia, the Northern Territory, and South-East Asia who undertake studies for the South Australian Certificate of Education (SACE)" (Senior Secondary Assessment Board of South Australia, 2005, p.5). Introduced in 1992-93, SACE is recognised as a credential and formal qualification within the Australian Qualifications Framework (AQF) (Keightley and Keighley-James, 2001). Offering more than 70 subjects over two stages to mostly post-compulsory students, the SACE was recently reviewed by a three-person panel consisting of the Honourable Greg Crafter, Dr. Patricia Crook, and Professor Alan Reid (Crafter, Crook, and Reid, 2006).

The substantive term of reference required the Review Panel to "achieve a curriculum and assessment framework that will meet the diverse needs of all students and result in high and more socially equitable levels of retention, completion and pathways beyond school" (Crafter et al., 2006, p. 28). The authors make a number of recommendations centred upon the creation of a new SACE that is based upon principles, design concepts, and features that are, they claim, flexible and responsive, credible, inclusive, connected, worthwhile, futures-orientated, and supportive of quality learning and teaching. The proposed new SACE represents a substantial shift in conceptualisation of knowledge, the ways in which it is organised, and what counts as an appropriate display of having learned it (Apple, 1993). For example:

[K]nowledge is shaped by the world views and ideologies of those who produce and present it, it is problematic rather than given. (Crafter et al., 2006, p. 106)

It was suggested that the distinction between mathematics–science–technology and arts– humanities–social and cultural studies as areas of knowledge is possibly no longer tenable at a time when the boundaries between disciplines are being blurred. (Crafter et al., 2006, p. 105)

And, the proposed reporting system will utilise a grading system whereby grades from E to A+ represent “achieved” in contrast to common assessment practices that use D to A letter grades to represent passing grades (Crafter et al., 2006, p. 136).

The Review Panel’s Final Report is divided into three major sections: (1) the case for reform, (2) a new SACE within a learning space, and (3) detailed reform proposals. The focus of this paper is largely the case for reform, the platform used to support the sweeping recommendations. The review panel’s report presents this case in three chapters: (1) current challenges, (2) the case for reform - statistical trends and patterns, and (3) the case for reform – community views. This paper critically examines the third of these chapters.

Chapter 3 of the SACE Review Final Report, *The case for reform – community views*, reports on “the extent and depth” to which the South Australian and Northern Territory’s communities “are concerned with senior secondary education and SACE” (Crafter et al., 2006, p. 57). The authors argue that these communities’ views “provide a resounding confirmation of the need for reform, and a compelling diagnosis of the areas in which change is required” (p. 57). In establishing their case for reform, the panel have placed their review within the realm of evidence-backed or evidence-based policy (Ritter et al., 2003; Solesbury, 2001). Such a move is commendable since educational decision-making calls “for data that supports conclusions reached from intuition and from the heart” (Montgomery, 2004, p. 160).

By using an evidence-based approach, the Review Panel opens the policy-making process to critique on methodological grounds. The focus of this paper is primarily upon the quality of the research that provides the evidence base for the SACE recommendations.

Central to this paper is the evaluation of the “resounding confirmation” and “compelling diagnosis” (Crafter et al., 2006) for the case for reform. This is done through the use of well-established, widely-held standards for qualitative research. Paraphrasing Apple (1993, p. 224), the paper’s task is simple: to raise enough serious questions to make us stop and think before we rush off and make changes that may be ill-informed and counter-productive. This paper does not directly address the review panel’s recommendations, simply because if the case (i.e., evidence) for reform is not adequate, then the substantive basis of the recommendations is absent.

STANDARDS FOR QUALITATIVE RESEARCH

Chapter 3 of the SACE Review Final Report discusses a qualitative study of community views. The American Educational Research Association (AERA) states that two overarching principles underlie the reporting of such research. These are:

First, reports of empirical research should be warranted; that is, adequate evidence should be provided to justify the outcomes and conclusions. Second, reports of empirical research should be transparent; that is, reporting should make explicit the logic of inquiry and activities that led from the development of the initial interest, topic, problem, or research question; through the gathering and analysis of data or empirical evidence; to the articulated outcomes of the study. (Task Force on Reporting of Research Methods in AERA Publications, 2006)

The warrant for claims can be established in a number of ways, including the comparison of evidence from a number of sources. The Review Panel states “knowledge is shaped by the world

views and ideologies of those who produce and present it” (Crafter et al., 2006, p. 106; see also Crotty, 1998). Such a view is commensurate with the need for triangulation. Triangulation is a methodological approach in which multiple paradigms, methods, sources, theories, and investigators are employed (Flick, 1992; Lewis and Grimes, 1999). Triangulation has significant potential to expand the depth and breadth of our understandings of complex social issues (Farmer et al., 2006). Triangulation is usually employed for confirmation, completeness and reproduction reasons (McEvoy, 2006; Risjord et al., 2002; Risjord et al., 2001; Zeller, 1997).

Regarding transparency, researchers using a qualitative approach should communicate the logic and interactive processes that led to their account (Altheide and Johnson, 1994). They should enable professional scrutiny and critique of their research (National Research Council, 2002). Researchers should establish the credibility of their findings, ensuring that the account “represents accurately those features of the phenomena that it is intended to describe, explain, or theorise” (Hammersley, 1992). Cutcliffe and McKenna (1999) argue that “the most useful indicator of the credibility of the findings is when the practitioners themselves and the readers of the theory view the findings and regard them as meaningful and applicable in terms of their experience” (p. 379). However, there are obvious limitations to this criterion, including the possibility of practitioner acquiescence and various forms of *groupthink* abounding (Janis, 1982). Groupthink “refers to a process by which a small group of decision makers ...[are] ... more concerned with achieving concurrence among their members than in arriving at carefully considered decisions” (Hensley and Griffin, 1986).

Central to the avoidance of acquiescence and groupthink is the understanding of one’s own position, a desire to learn the partiality of that position, and the expression, questioning, and challenging of differently-situated knowledge (Enslin et al., 2001; Young, 1993). Consequently, the critical examination and reporting of the researcher’s own conceptual framework, including preconceptions, is important in establishing the warrant for each claim (Task Force on Reporting of Research Methods in AERA Publications, 2006). But even that is not enough since “We humans seem to be extremely good at generating ideas, theories, and explanations that have the ring of plausibility. We may be relatively deficient, however, in evaluating and testing our ideas once they are formed” (Gilovich, 1991, p. 59). That can be especially problematic when quotations are selected to support political positions and arguments.

The use of anecdotal evidence can be an especially powerful and persuasive tool in formulating educational policy, with such evidence often being more convincing than statistical evidence, possibly because of its higher imagineability (Hoeken, 2001). Thus the examination of community views presented in the SACE Review Final Report is important, especially if the political or philosophical positions of the researchers are unacknowledged. That examining process starts in this paper with an analysis of the reported participants.

THE STAKEHOLDERS

The Review Panel appears to have relied on convenience sampling, although it is probable that politically-important case sampling was also utilised (Patton, 1990). Crafter, Crook, and Reid (2006) state that they:

[L]istened to the views of many stakeholders in South Australia and the Northern Territory over a five-month period in mid-2004. Written and oral submissions were received from young people, both in and out of school; their parents and teachers; business, community and government leaders; unions; employers and employee organisations; the education community; and the community at large. (p. 57)

For reasons unknown, the Review Panel did not obtain submissions from South-East Asian SACE participants. In 2005 there were 1288 Asian students studying the South Australian Matriculation

(SAM) program based upon SACE stage 2 subjects, representing 6.6 per cent of the students receiving one or more Stage 2 subject in that year (Senior Secondary Assessment Board of South Australia, 2005). Of these students, an impressive 97.0 per cent completed the Higher Education Selection Subjects (HESS) requirements for admission to the University of Adelaide, Flinders Universities, and the University of South Australia. The exclusion of these students from the review lends support to the view that the review was selective, avoiding high-performing cohorts. There is not a single quote in the chapter that reflects the view of South-East Asian and other high-performing students. An unrepresentative sample of students is inadequate for the purposes of making generalisations about the SACE student population.

While seeking to ensure that SACE would meet the “diverse needs of all students and result in high and more socially equitable levels of retention, completion and pathways beyond school” (Crafter et al., 2006, p. 9), the Review Panel apparently decided not to report why SACE is *appealing* to at least some students. In so doing, the Review Panel has crafted their reform to disempower these students by ignoring, neglecting or downplaying their views. Justification for this action may come from the perception that successful students represent the privileged or societally empowered. For example, Luke (2003) claims that “Australian schools service the social and economic interests of slightly more than half of all Australian youth” (p. 89) while Taylor (1982) writes that “This process of imposition of reality is hidden beneath an ostensibly neutral system which favours those with power in society” (p. 152). Such statements are commensurate with the proposition that through consensual domination, a powerful group in South Australia is controlling education and the state (Robinson, 1996). Peck (2001) argues that “hegemonic power is involved in selecting what knowledge is of value and defines the agenda and limits of any debate by presenting certain concepts and relationships as normal” (p. 61). These theorists do not directly account for the students who ‘escape’ their socio-economic class, but instead argue that these individuals help perpetuate the system:

The exceptional success of those few individuals who escape the collective fate of their class apparently justifies educational selection and gives credence to the myth of the school as a liberating force among those who have been eliminated, by giving the impression that success is exclusively a matter of gifts and work. (Bourdieu, 1976 p. 116)

A trend not recognised by Bourdieu and the Review Panel is the absolute change in advantaged outcomes for young people of all backgrounds (Croll, 2004). Since the 1980s, Australia has witnessed a massive increase in the proportion of young people completing Year 12 studies, entering universities, and moving away from manual labour jobs and into managerial and professional occupations.

If the Review Panel is following a neo-Marxist approach, their report may be read as a subversive political document aimed at destroying an educational hegemony. This would explain why there is not a single quote that indicates what students, teachers, parents, or other stakeholders find positive in the present SACE. In utilising a theory of cultural reproduction, they have seemingly overlooked the upward educational and class mobility between generations (Goldthorpe, 1996).

In order to sustain an argument of hegemonic domination, the Review Panel needs to explicitly describe their theory of microsituational dominance (Collins, 2000). As Sayer (2000) observes

The same causal power can produce different outcomes (for example, economic competition can prompt firms to restructure or to close). Sometimes different causal mechanisms can produce the same result: for instance, you can lose your job for a variety of reasons. (p. 15)

A microsituational, or individual-level, theory would explain how information is viewed differently by people within the same social setting. For example, how and why do students from the same background engage differently with the SACE? A meso-level could be added to the microsituational explanation to take into account the social environment (Von Scheve and Von Luede, 2005).

A rational-action-theory approach may have been more suitable for the SACE Review in this and other respects. Such a theory assumes that students have both some possibility and some capacity “for acting autonomously and for seeking their goals in ways that are more or less appropriate to the situations in which they find themselves” (Goldthorpe, 1996). In the absence of a microsituational theory, without addressing the overall changes that have taken place in South Australian society, and given the purposive sampling of stakeholders (and their comments), the review fits rather well within the realm of ‘data torturing’.

DATA TORTURING

Data torturing involves manipulating information in a variety of ways until the researcher establishes a desired claim. Like other forms of torture, “it leaves no incriminating marks when done skilfully, and like other forms of torture, it may be difficult to prove even when there is incriminating evidence” (Mills, 1993, p. 1196). Two major types, opportunistic and Procrustean, are identified in the literature. Opportunistic data torturing involves manipulating the significant testing conditions to find the desired results. Such manipulations are reasonably easy to spot and have been, to some degree, circumvented through the use of rigorous statistical reporting standards (Finch et al., 2001). Procrustean data torturing relies on selective reporting. Forms of Procrustean data torturing include selecting participants or information in a way that supports a claim while disregarding or excluding those participants or information likely to undermine a sought-after claim. Thus, the selective use of quotes is one indication of Procrustean data torturing. Selective reporting may involve aggregating the data in ways that support the desired claim or the use of vague or misleading terms such as ‘many’, ‘most’, ‘some’, and ‘few’ without mention of the number and category of stakeholders involved.

FREQUENCIES AND THE CASE FOR REFORM

Where a warranted claim “entails a generalising statement, it should be supported with evidence of its relative frequency” (Task Force on Reporting of Research Methods in AERA Publications, 2006, p. 11). This applies to the use of terms like ‘most’, ‘many,’ and ‘frequently’. In addition, general phrases like ‘Students complained...’ and ‘A number of...’ that are likely to infer generalisability require appropriate support.

A recurrent issue in the “The case for reform – community views” is the apparent generalisation to a population. On the basis of the submissions received by the Review Panel, the report speaks in general terms about students, teachers, and academic subjects. For example, “Many students are disaffected with school for a range of reasons” (Crafter et al., 2006, p. 58). Later in the same section of the report, “Numbers of students believed that flexibility would be increased...” and “the lack of success of many students” (Crafter et al., 2006, p. 58) adds to the perception of a grave problem. Notwithstanding the possibility that these students are disaffected with school and not SACE per se, the question is how the Review Panel established the nature and extent of this disaffection. Nowhere in the report is the actual number of student respondents mentioned, nor is a population-orientated sampling method described, implemented, or evaluated. Further in the same section is the following statement:

This is consistent with the findings of other Australian research that has attributed the lack of success of many students to the inability or unwillingness of educational

institutions to be flexible in their approaches to curriculum, assessment, pedagogy and school organisation and structures. (Crafter et al., 2006, p. 58)

Again the “lack of success of many students” is problematic. Although it can be reasonably argued that all students should experience success, the nature of the success is ill defined and vaguely conceptualised, and the lack of success is both overplayed and poorly reported. To what else can the lack of success be attributed? Of the four references cited to support the statement, the first two (Boughton, 2001; Department of Education Science and Training, 2002) focus upon small case studies of Indigenous students and the third (Thomson, 2002) is a case study of students from an urban area of Adelaide. The fourth reference, a book by Teese and Polesel (2003), is an attack upon a claimed domination of the Year 12 curriculum by universities using primarily Victorian data.

The work of Cormack and colleagues (Cormack, 2004; Cormack and Comber, 1998) cited elsewhere in the Review Report, is based on case study research conducted in less than a dozen schools. The initial report on that research, noting the smaller number of schools, states:

Hence this report makes no claims for generalising beyond these specific student groups. However, the close-up studies of the experiences of students in these schools raise important questions about who are the students at risk of not completing the SACE, and what being ‘at risk’ might mean in different locations and schools. (Cormack and Comber, 1998)

The Review Panel would have been wise to have done likewise and avoided the use of an unqualified ‘many students’.

The pervasiveness of unsubstantiated generalisations and the use of unqualified numerical terms is evident in Table 1. While the text in this table was extracted from Chapter 3 of the SACE Review Final Report, the problem of misleading or inappropriate use of such terms is by no means confined to that chapter. The Review Panel should have documented sampling methods and data reduction strategies if it really wanted to make credible generalisation statements.

THE FLEXIBILITY OF SACE

The Review Panel makes a number of significant recommendations aimed at reforming SACE. They do so while acknowledging that “The flexibility that already exists in SACE was valued by many respondents but was also considered to be a ‘well kept secret’ and to not go far enough” (Crafter et al., 2006, p. 58). At least two sets of questions stemming from their claim should be answered. First, who is keeping it a secret? Is this a problem with SSABSA, schools, teachers, or students, or does the root of the problem lie elsewhere? Second, what are the mechanisms used to keep it a secret? Without an unequivocal answer to these questions, how will implementation problems be rectified? Indeed, it is difficult to envisage a quality review failing to pursue this line of investigation. Second, just how flexible does SACE need to be? We are told “numbers of students” wanted more “opportunities to negotiate the content of their learning and the assessment methods used” (Crafter et al., 2006, p. 58). How do these ‘numbers of students’ compare with the ‘many respondents’? Do these ‘numbers of students’ have ideas to ensure reasonable comparability of assessments? And how will ‘standards’ be maintained? Cormack (2004), reporting on the findings of a small scale case study-type intervention project, recommends more flexibility in the timing of enrolments, results and certification, but what else is needed beyond SSABSA current practices? Importantly, how will the proposed changes maintain the credibility and integrity of the SACE? Or is SACE to be changed at the whim of apparently disaffected students who may or may not be accountable for their own behaviour?

Table 1. A selection of unqualified statements (Source: Crafter et al., 2006)

Many submissions from schools, individuals and students identified particular stressors associated with SACE studies, especially at Stage 2 level. (p. 59)

In that sense, it is widely held that for many students Stage 2 is quite unlike any other year either before or after, in terms of its intensity and perceived separation from the reality of their lives. (p. 59)

The majority of students, teachers and parents gave support in their submissions to there being more recognition of prior learning and accreditation of out-of-school learning. The SSABSA Board said that the current recognition policy could be used to a greater extent to give credit to non-school learning. (pp. 59-60)

Students believed that relevance would be increased if they had greater opportunity to influence the content of their studies and the methods used to assess their learning. (p. 60)

Many respondents referred to the importance of developing specific skills and capacities through the senior curriculum. (p. 61)

A greater capacity for students to negotiate their learning programs and an enhanced capacity to integrate community experience and community-based learning into the SACE were advocated in many submissions as ways to increase the relevance of the curriculum for students. (p. 61)

There was widespread support for schools having the capacity to shape curriculum and assessment at the local level, within broad centrally developed frameworks. (p. 61)

A number of schools supported the abandonment of the current SACE pattern requirements, arguing that it inhibited them from tailoring programs to students' interests and career aspirations. Similarly, many students felt that the pattern of subjects they were required to study was restrictive, and prevented them from specialising in areas of interest to them. (p.62)

Many respondents expressed concern that there had been a trend to make the content of subjects offered at Stage 2 of the SACE more abstract. This was generally accompanied by a concern that the assessment requirements at Stage 2 had become more 'academic'. (p.62)

There was wide support for a closer association between the SACE and the South Australian Curriculum, Standards and Accountability (SACSA) Framework (DETE 2001). This was commonly linked to the fact that Year 10 is part of the Senior Years Band within the SACSA Framework. (p. 64)

Most respondents considered that current assessment practices within the SACE are problematic. (p. 65)

Almost half the students interviewed during the consultation process were involved with parttime work and other responsibilities outside school. These students were particularly affected by the assessment demands at Stage 2, as were those young people who were responsible for supporting their families. (pp. 65-66)

The Panel noted the strength of community concern about the effect of university selection processes on senior secondary education, and the strong and widespread desire for change. (p. 73)

To the extent that early school leaving and poor performance by certain groups of young people is a symptom of a deeper underlying dissatisfaction with the school experience, the nature of the senior secondary curriculum and the structures and processes that surround it and support young people's engagement in it need to be reformed. The sources of the dissatisfaction include the failure of the curriculum to gain or hold a student's interest; a clash between the culture of the school environment and the student's needs, interests, values or priorities; and a judgment by the student that some other activity promises a better return on time and effort than does staying at school. The need for reform is supported by a wide range of stakeholders. They have identified, each from their own perspectives, the areas that need to be addressed to improve the participation, retention and success of all students and, in some cases, specific changes to correct the current low levels of participation and achievement for specific groups of young people. In light of the groundswell of support for reform and the generally shared diagnosis of what needs to be changed, the Review Panel has identified a set of principles to guide the reform of senior secondary education. These principles form the basis for the recommendations contained in Parts B, C and D of the Report. They are outlined in the following Chapter. (p. 79)

The Review Panel notes "There is strong support for a personalised approach to learning, using case management strategies to support young people, including mentoring and counselling for those inclined to drop out of the system and those struggling to stay on" (p. 59). Such findings are congruent with Cormack's research (Cormack, 2004; Cormack and Comber, 1998). Notwithstanding the enormous cost of providing intensive individualised educational programs, the question should be asked whether the existing SACE would suffice if such mechanisms were implemented. The equity of providing such programs for the students who are at risk of dropping

out, and not for those students who are underachieving would need to be explored. That the Review Panel did not address the 'gifted students' gives at least tacit support for the notion of a bias against specific sections of the student population and the subjects they choose to study. This leads to a much bigger issue: Is the Review Panel aiming at equity and excellence, or just equity? If the proposed new SACE framework is capability orientated and truly involves 'success for all', then it is both reasonable and certain that concerns about a minimum competency curriculum will surface. From this point of view, excellence is not a primary concern of the Review Panel and hence their recommendation that SACE and the Tertiary Entrance Rank (TER) should be further separated is questionable.

TERTIARY ENTRANCE RANK, ACADEMIC CREEP, AND SACE

The Tertiary Entrance Rank (TER) is a percentile score derived from specific SACE subjects. The following text appears under the heading 'The case for selecting students for university on the basis of their Year 12 performance':

In their written submissions, the universities argued that a TER based on students' Year 12 results has high credibility as a fair and equitable method of selection for university and gives credibility to the SACE. Along with SSABSA, the universities argued that achievement in the SACE is a better predictor of school leavers' success at university than independent tests of students' potential or aptitude, and that selection for university should continue to be based on achievement in school studies. Some school groups, on the other hand, cited the high proportion of their past students who had dropped out of university within the first year as evidence that the TER was not necessarily a good predictor of success at university. (Crafter et al., 2006, p. 72)

The final sentence in the above quote is not an argument for selecting students on the basis of their Year 12 performance. But more importantly, it is a weak argument against the use of the TER. The TER is not designed to predict student dropout. As the universities argued, it is designed to predict student success! Consider the following questions directed at the final sentence of the above quote:

- Which school groups?
- Was there anything else connecting these school groups? For example, what was climate of the school? What preparation did the students receive for university study?
- What is a high proportion?
- What SACE topics did they take?
- What programs were they enrolled in at university? Does this have an effect on retention?
- Why did the students drop out?

The last question is perhaps the most interesting. Students drop out of university for many reasons, some unrelated to their secondary schooling, TER, or, for that matter, university programs (McLaughlin et al., 1998; Power, 1984; Power et al., 1987; Win and Miller, 2005). Research, some of which was conducted in South Australia, shows that the TER is a strong predictor of achievement in mathematics, chemistry, physics, engineering and medicine but a relatively weak predictor for achievement in the arts, humanities and law (Everett and Robins, 1991; Power et al., 1987). To simply report that 'some school groups' stated that the TER was not a good predictor of success provides little support for severing the links between SACE and TER, and does little justice to the existing body of research literature.

The Review Panel states that “Many respondents expressed concern that there had been a trend to make the content of subjects offered at Stage 2 in the SACE more abstract” (p. 62) and this is generally accompanied with a concern that assessment requirements at Stage 2 had become more ‘academic’. Ignoring the unqualified ‘many respondents’, there are several questions that need to be asked. For example, what is ‘academic’? The authors state that several subjects had been “redeveloped and subsequently rendered out of reach of many students” (p. 61). Again, how many students? What are the characteristics of these students, their teachers and schools? And, implementing more thorough research processes, what changes were made to these subjects, why were these changes made, who made these changes, and how were the changes made? Is this perception widespread, or is it localised? Are there some schools that operate a curriculum model that meets the needs and goals of all students? If so, how do these schools operate? If Crafter et al. (2006) are seeking to challenge a hegemonic system that utilises ‘academic subjects’ as a primary means of control, exposing the curriculum change processes to a thorough review should provide evidence of the hegemonic apparatus. But they passed up this opportunity, begging the question: Why? There is also a need to provide corroborating evidence showing that this claimed detrimental effect is well supported. For example, it would have been relatively easy to compare enrolment and pass rates before and after the changes to subjects, albeit within the limitations of the SSABSA standard-setting process. This analysis could have been completed using a number of comparative categories, including for example, male/female, rural/urban, small school/large school, and Indigenous/non-Indigenous.

Furthermore, changes to subject curriculum and assessment are largely teacher driven through committees and must go through a series of SSABSA reviews. Crafter et al. (2006) stated that greater reliance is being placed upon teacher judgment for assessment “since teachers are closest to the action of student learning, they are in the best positions to make decisions that relate to when, where and how assessment can be used to promote student learning” (p. 129). If this is the case, then the Review Panel needs to reconcile two apparently contradictory lines of thought. Either teachers’ judgement, especially through the peak subject committees, are credible and trustworthy in both curriculum and assessment matters or they are not. Some support for the second position can be found in the literature. For example, Frisbie (1988) reports teacher-made assessment reliabilities of around 0.50. Postlethwaite and Wiley reported final-year achievement data in biology, chemistry, earth sciences, and physics for 23 countries (Postlethwaite and Wiley, 1992). This achievement data has coefficients of variation of 0.25 or higher. Translating this to a SACE scale of 0 to 20, a subject mean of 10 would have a standard deviation of 2.5 or more. Assuming a 2.5 point standard deviation and a reliability of 0.50, the uncertainty in a student’s assessment would be 1.75. In other words, we would be approximately 95 per cent certain a student with a score of 10 on a teacher-made assessment with a reliability of 0.50 would have a true score within the range from 6.5 through to 13.5.

Elsewhere, under a heading “Validity, reliability and fairness” (p. 67), validity is confused with choice of assessment method. Assessment experts do not consider assessment methods as being valid or invalid. Rather, it is the interpretation and use of assessment results that are valid or invalid. That the Review Panel made this most fundamental mistake suggests that the review of SACE was not conducted with a sound knowledge of assessment.

Of course, there is a need to ensure that a suitable curriculum is offered to each student, but consideration needs to be given to whether the Review Panel offers any credible evidence of academic creep. Certainly, triangulation with other sources is required. Marks, McMillan and Hillman (2001) report “A lower proportion of South Australian students take tertiary entrance subjects compared to their peers in other states” (p. 17) (see also Table 2). In 1998, 76.5 per cent of New South Wales students obtained a university entrance score compared with just 65 per cent in South Australia. As shown in Tables 3 and 4, South Australia has a lower percentage of its

population who have a Bachelor degree or higher than any other Australian state, with the single exception of Tasmania. While academic creep may indeed be occurring, there appears to be evidence in the Final Report of an academic cringe effect as they argue that the present SACE is dominated by the TER and university-orientated curricula.

A further problem with the charge of 'academic creep' is that other theories offer better, more plausible alternatives. For example:

It is simpler to assume that there is no systematic variation in levels of aspiration, or related values, among classes, and that variation in the courses of action that are actually taken arises from the fact that, in pursuing any given goal from different class origins, different 'social distances' will have to be traversed ... different opportunities and constraints, and thus the evaluation of different sets of probable costs and benefits, will be involved. (Goldthorpe, 1996 p. 490)

Table 2. Summary statistics for TER Scores, All Students and By Selected Jurisdiction (Source: Marks, McMillan, and Hillman 2001, p. 65)

Standard Statistics (Weighted)	All	NSW	Vic	Qld	SA
Mean	70.2	69.1	70.9	64.9	79.9
(Standard error)	(0.5)	(1.0)	(0.9)	(1.2)	(1.0)
Median	73.8	71.1	72.0	70.0	81.5
Standard Deviation	19.8	22.5	19.5	24.1	10.0
Inter-Quartile Range	31.3	29.1	31.2	47.5	22.0
Percent of Sample with Score (Weighted)	All	NSW	Vic	Qld	SA
Of Year 9 Cohort	52.6	57.1	62.6	55.4	45.0
Of Year 12 Participants	68.0	73.0	76.8	70.5	59.4

Table 3. Level of highest educational attainment as percentage of State total, 2001 (Source: ABS Education and Work, 2001, Cat. No. 6227.0, Table 8)

State	Year 10 and below	Year 11 to Year 12	Cert. to Adv. Dip.	Bachelors or above	Total
New South Wales	35.5	24.6	21.9	18.0	100.0
Victoria	27.5	32.6	20.7	19.1	100.0
Queensland	35.0	27.5	23.1	14.4	100.0
Western Australia	32.0	28.8	23.0	16.2	100.0
South Australia	30.6	34.8	20.9	13.7	100.0
Tasmania	45.1	19.9	23.4	11.6	100.0
Northern Territory	29.9	30.0	24.3	15.8	100.0
Australian Capital Territory	20.7	30.6	19.3	29.4	100.0
Australia	32.6	28.4	21.9	17.1	100.0

Such a view leads one away from a perspective of 'academic' domination towards an examination of the curriculum offered in middle and high schools and its effect on the social distance to be traversed. From this perspective, the less advantaged class position can be ameliorated to a degree through the offering of appropriate curriculum and support structures that minimise the distance between secondary and tertiary education. The separation of secondary education from tertiary education may simply increase any barriers already faced by the working class. What may be more important is the provision of suitable programs, including curricula, to enable students to

make choices without undue concern about the social distances. A thorough review of the middle school curriculum would be a suitable starting point.

Table 4. Level of highest educational attainment as percentage of State total, 2005
(Source: ABS Education and Work, 2005, Cat. No. 6227.0, Table 13)

State	Year 10 and below	Year 11 to Year 12	Cert. to Adv. Dip.	Bachelors or above	Total
New South Wales	29.5	24.6	23.3	21.2	100.0
Victoria	23.0	32.0	22.7	21.0	100.0
Queensland	28.7	27.8	25.8	16.6	100.0
Western Australia	26.8	28.1	25.4	18.4	100.0
South Australia	23.9	34.9	23.5	15.7	100.0
Tasmania	39.0	21.3	23.0	15.3	100.0
Northern Territory	22.4	30.1	28.0	18.1	100.0
Australian Capital Territory	17.5	29.7	18.4	32.6	100.0
Australia	27.0	28.3	23.8	19.6	100.0

One more point should be made about the Review Panel's attack on the university pathway. As shown in Table 5, the relationship between TER and parental occupational and educational group is slightly curvilinear, with children of semi-skilled and unskilled parents receiving higher scores than children of skilled manual workers. There was no significant difference between TERs obtained by students with labouring or unskilled parents and those students with professional or managerial parents. Crafter, Crook, and Reid (2006) need to explain this pattern if they are to sustain an argument of curriculum domination by specific social classes.

Table 5. Mean TER score by Parental Occupational and Educational Group – All Students and by Selected Jurisdiction, 1998 (Marks, McMillan, and Hillman 2001, p.18)

Parent's Occupational Group	All	NSW	Vic.	Qld	SA
Professional	76.9 (0.7)	75.6 (1.3)	78.8 (1.2)	70.7 (1.9)	83.4 (1.4)
Managerial	72.5 (0.8)	70.9 (1.4)	72.1 (1.6)	68.4 (1.7)	82.5 (1.2)
Sales, Clerical, Service	69.0 (0.9)	67.9 (1.5)	69.7 (1.8)	64.3 (2.3)	75.7 (1.9)
Trades, Skilled Manual	65.3 (0.9)	63.3 (1.5)	66.7 (1.3)	62.1 (2.2)	71.9 (2.0)
Semi-Skilled Manual, Operatives	63.6 (1.2)	62.1 (2.4)	64.7 (2.0)	60.8 (2.9)	77.2 (3.4)
Labourers, Unskilled Manual	64.9 (1.2)	64.6 (2.4)	64.7 (1.7)	59.4 (2.6)	80.0 (2.0)

CASE FOR REFORM - OF SACE OR (GOVERNMENT) SCHOOLS?

The SACE Review Panel received written submissions and consultations predominately from government schools (Appendices 3 and 4 of the SACE Review Final Report). That most submissions came from the government education sector makes the report rather disturbing. If, as the Review Panel seems to be claiming that:

Many students are disaffected with school (p. 58).

Whether to go to school or not is a daily question for many young people (Researcher on youth at risk, p. 59).

The number of students doing part-time work compounds the problem of school satisfaction (Representative of the Youth Affairs Council of SA, p. 59).

Then the logical question to be asked is: are these comments representative of all students, or do they primarily reflect the views of public school students? The second part of the question has substantial merit since the overall drift is from government to non-government schools and not the other way around. That being the case, it may be that the Review Panel is arguing for an educational reform aimed at addressing problems in the public school sector. Of course, the use of “many” in the quotes is questionable and highlights the need for greater transparency and a detailed sampling plan.

SUMMARY AND CONCLUSIONS

If the core features of a democratic citizenship include the ability to

Think critically, to participate in public dialogue, to consider the rights and needs of others, to live in harmony with diverse groups of people, to act on important social issues, to be accountable for one’s choices and decisions, and to work to bring about the conditions in which all individuals can develop to their fullest capacity and potentials. (Hyttén, 2006)

Then a suitable litmus test of Australian democracy will be when we create “conditions for a free exchange of ideas ... enabling us to make fully informed decisions” (Hyttén 2006, p. 221) as we strive for equity, self-determination and freedom. Too often the research practices are hidden from the public and blind faith invited or, perhaps more accurately, demanded. Unfortunately, the same can be said of the SACE Review Final Report. As noted by Raymond and Hanushek (2003):

Distinct from other policy fields, reports in education seem to be taken at face value or – worse – on the political orientations of the authors, independent of the rigor of the analysis or the suitability of the inferences that are drawn. (p. 15)

If improving education in South Australia and moving the State towards a fuller realisation of democratic ideals are sought-after outcomes, then reports like those of the SACE Review Panel must invite, encourage, enable, and facilitate the critical analysis of their findings before their recommendations are implemented.

The Review Panel is no doubt serious in their intent to make South Australian schools more socially democratic and more socially just. They have raised many issues that are part of the common lore of South Australian, and perhaps Australian, education.

Democratic schools are both (humanistic and child-centred) . . . in many ways, but their vision extends beyond purposes such as improving the school climate or enhancing students’ self-esteem. Democratic educators seek not simply to lessen the harshness of social inequities in school, but to change the conditions that create them. (Crafter et al., 2006, p. 11)

However, there is little real sense of democratic processes being facilitated by their report. The lack of transparency exposes them to charges of being undemocratic and thus philosophically inconsistent with their espoused aims. Researchers must be accountable, exposing their research to critical review (Fine et al., 2000). Reviews such as that undertaken by Crafter et al. (2006) should ensure that the submissions and other information are “audit worthy” (Freedland and Carney, 1992). Given the high stakes attached to the SACE certificate, it is important that independent researchers be able to deconstruct thoroughly the procedures, decisions, and conclusions (Schwandt and Halpern, 1988). The research information and processes used by the Review Panel must be available for scrutiny. Without this, the authors open themselves to charges

of paternalism with an attitude of ‘trust us, we know what is best for you, your children and the State’.

REFERENCES

- Altheide, D. L., and Johnson, J. M. (1994). Criteria for judging interpretative validity in qualitative research. In N. Denzin and Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 485-499). London: Sage Publications.
- Apple, M. W. (1993). The politics of official knowledge: Does a national curriculum make sense? *Teachers College Record*, 95(2), 222-241.
- Bourdieu, P. (Ed.). (1976). *The School as a Conservative Force: Scholastic and Cultural Inequalities*. London: Routledge and Kegan Paul with Open University Press.
- Collins, R. (2000). Situational Stratification: A Micro-Macro Theory of Inequality. *Sociological Theory*, 18(1), 17-43.
- Cormack, P. (2004). The students at risk of not completing the SACE (STAR 3) project: Final report. Retrieved 30 April 2006, from <http://www.ssabsa.sa.edu.au/research/star3.pdf>
- Cormack, P., and Comber, B. (1998). *Students at Risk of Not Completing SACE (STAR) Project: OVERVIEW and Analysis of the School-Based Research in the Students at Risk of Not completing SACE Project*. South Australia: University of South Australia.
- Crafter, G., Crook, P., and Reid, A. (2006). *Success for All: Ministerial Review of Senior Secondary Education in South Australia*. Adelaide: Government of South Australia.
- Croll, P. (2004). Families, social capital and educational outcomes. *British Journal of Educational Studies*, 52(4), 390-416.
- Crotty, R. (1998). *Foundations of Social Research: Meaning and Perspective in the Research Process*. St Leonards, NSW: Allen and Unwin.
- Cutcliffe, J. R., and McKenna, H. P. (1999). Establishing the credibility of qualitative research findings: the plot thickens. *Journal of Advanced Nursing*, 30(2), 374-380.
- Department of Education Science and Training. (2002). *What works. The Program: Improving Outcomes for Indigenous Students*. Canberra: Commonwealth of Australia.
- Department of Education Science and Training. (2005). *Students 2004: Selected Higher Education Statistics*. Canberra: Commonwealth of Australia.
- Enslin, P., Pendlebury, S., and Tjiattas, M. (2001). Deliberative democracy, diversity and the challenges of citizenship education. *Journal of Philosophy of Education*, 35(1), 115-130.
- Everett, J. E., and Robins, J. (1991). Tertiary entrance predictors for first-year university performance. *Australian Journal of Education*, 35, 24-40.
- Farmer, T., Robinson, K., Elliott, S. J., and Eyles, J. (2006). Developing and implementing a triangulation protocol for qualitative health research. *Qualitative Health Research*, 16(3), 377-394.
- Finch, S. J., Cumming, G., and Thomason, N. (2001). Reporting of statistical inference in the Journal of Applied Psychology: Little evidence of progress. *Educational and Psychological Measurement*, 61, 181-210.
- Fine, M., Weis, L., Weseen, S., and Wong, L. (2000). For Whom? Qualitative Research, Representations, and Social Responsibilities. In N. Denzin and Y. Lincoln (Eds.), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Flick, U. (1992). Triangulation revisited: Strategy of validation or alternative? *Journal for the Theory of Social Behavior*, 22(2), 175-197.

- Freedland, K. E., and Carney, R. M. (1992). Data management and accountability in behavioral and biomedical research. *American Psychologist*, 47, 640-645.
- Frisbie, D. A. (1988). Reliability of Scores From Teacher-Made Tests. *Educational Measurement: Issues and Practice*, 7(1), 25-35.
- Gilovich, T. (1991). *How do we know what isn't so: The Fallibility of Human Reason in Everyday Life*. New York: Free Press.
- Goldthorpe, J. (1996). Class analysis and the re-orientation of class. *British Journal of Sociology*, 47(3), 481-505.
- Hammersley, M. (1992). *What's Wrong with Ethnography*. London: Routledge.
- Hensley, T. R., and Griffin, G. W. (1986). Victims of Groupthink. *Journal of Conflict Resolution*, 30(3), 497-531.
- Hoeken, H. (2001). Anecdotal, Statistical, and Causal Evidence. *Argumentation*, 15, 425-437.
- Hytten, K. (2006). Education for Social Justice: Provocations and Challenges. *Educational Theory*, 56(2), 221-236.
- Janis, I. L. (1982). *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*. Boston, MA: Houghton Mifflin.
- Keightley, J., and Keighley-James, D. (2001). *Negotiating Multiple Interests in High-stakes Assessment: Getting inside construct validity*. Wayville, SA: SSABSA.
- Lewis, M. W., and Grimes, A. J. (1999). Metatriangulation: building theory from multiple paradigms. *Academy of Management Review*, 24(4), 672-690.
- Luke, A. (2003). After the marketplace: Evidence, social science and educational research. *The Australian Educational Researcher*, 30(2), 87-107.
- Marks, G. N., McMillan, J., and Hillman, K. (2001). *Tertiary Entrance Performance: The Role of Student Background and School Factors*. Camberwell, Vic: Australian Council for Educational Research.
- McEvoy, P. (2006). A critical realist rationale for using a combination of quantitative and qualitative methods. *Journal of Research in Nursing*, 11(1), 66-78.
- McLaughlin, G. W., Brozovsky, P. V., and McLaughlin, J. S. (1998). Changing Perspectives on Student Retention: A Role for Institutional Research. *Research in Higher Education*, 39(1), 1-17.
- Mills, J. (1993). Data Torturing. *The New England Journal of Medicine*, 329, 1196-1199.
- Montgomery, E. C. (2004). What my students need to know. In C. Glickman (Ed.), *Letters to the Next President: What we can do About the Real Crisis in Public Education*. New York: Teachers College Press.
- National Research Council. (2002). Scientific research in education. In R. J. Shavelson and L. Towne (Eds.), *Committee on Scientific Principles for Educational Research*. Washington, DC: National Academy Press.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*. Newbury Park, CA: Sage Publications.
- Peck, B. (2001). The poor stay poor and the rich stay rich. *Issues in Educational Research*, 11(2), 45-64.
- Postlethwaite, T. N., and Wiley, D. E. (1992). *The IEA Study of Science II: Science Achievement in Twenty-Three Countries*. Oxford: Pergamon Press.
- Power, C. (1984). Factors Influencing Retentivity and Satisfaction with Secondary Schooling. *Australian Journal of Education*, 28(2), 115-125.

- Power, C., Robertson, F., and Baker, M. (1987). *Success in Higher Education*. Canberra, ACT: Australian Government Publishing Services.
- Raymond, M. E., and Hanushek, E. A. (2003). *Shopping for Evidence Against School Accountability*.
- Risjord, M., Dunbar, S. B., and Moloney, M. F. (2002). A new foundation for methodological triangulation. *Journal of Nursing Scholarship*, 34(3), 269-275.
- Risjord, M., Moloney, M. F., and Dunbar, S. B. (2001). Methodological triangulation in nursing research. *Philosophy of the Social Sciences*, 31(1), 4059.
- Ritter, G., W., Zief, S. G., and Lauver, S. (2003). The Use of Evidence in Out-of-school Time Initiatives: Implications for Research and Practice. *Penn GSE Perspectives on Urban Education*, 2(1), 1-7.
- Robinson, W. I. (1996). *Promoting Polyarchy: Globalization, U.S. Intervention, and Hegemony*. Cambridge: Cambridge University Press.
- Sayer, A. (2000). *Realism and Social Science*. London: Sage Publications.
- Schwandt, T. A., and Halpern, E. S. (1988). *Linking Auditing and Metaevaluation: Enhancing Quality in Applied Research*. Newbury Park, CA: Sage.
- Senior Secondary Assessment Board of South Australia. (2005). *Annual Report*. Wayville, S.A.: SSABSA.
- Solesbury, W. (2001). Evidence-based policy: Whence it came and where its going. Retrieved 28 May 2006, from <http://www.evidencenetwork.org>
- Task Force on Reporting of Research Methods in AERA Publications. (2006). AERA Draft Standards for Reporting on Research Methods. Retrieved 15 April 2006, from www.aera.net
- Taylor, S. (1982). Schooling and social reproduction. *The Australian Journal of Education*, 26(2), 144-154.
- Teese, R., and Polesel, J. (2003). *Undemocratic Schooling: Equity and Quality in Mass Secondary Education in Australia*. Melbourne: Melbourne University Press.
- Thomson, P. (2002). *Schooling the Rustbelt Kids*. Stoke on Trent, UK: Trentham Books.
- Von Scheve, C., and Von Luede, R. (2005). Emotion and social structures: Towards an interdisciplinary approach. *Journal for the Theory of Social Behaviour*, 35(3), 303-328.
- Win, R., and Miller, P. W. (2005). The effects of individual and school factors on university students' academic performance. *The Australian Economic Review*, 38(1), 1-18.
- Young, I. (1993). Justice and communicative democracy. In R. Gottlieb (Ed.), *Radical Philosophy: Tradition, Counter-Tradition, Politics* (pp. 123-143). Philadelphia: Temple University Press.
- Zeller, R. (1997). Validity. In J. P. Keeves (Ed.), *Educational Research, Methodology, and Measurement: An International Handbook*. New York: Pergamon.

The heart of the new SACE

J. A. Gibbons

Flinders University Institute of International Education tonygibbons@iprimus.com.au

The SACE Review proposes that a set of knowledge, skills and dispositions called capabilities should form the core of the new SACE. As the Review emphasises, there must be widespread, systematic research and discussion on the range and nature of the capabilities. The SACE Review suggests five capabilities as a basis for discussion. This paper is offered as a contribution to that discussion through an analysis of the knowledge, skills and dispositions to which the Review refers. The paper identifies and analyses a presupposition of all the capabilities, the capacity to reflect, and argues the importance of the development of that capacity for the developing human being.

Capabilities, knowledge, dispositions, reflection, hard core

INTRODUCTION

In March 2006 a review of the South Australian Certificate of Education (SACE) was presented to the Minister of Education for South Australia. Chapter 6 of the SACE Review commences with a sub-heading, 'Curriculum for a new SACE'. The introduction to that sub-section contains:

At the heart of the new SACE rests a set of 'Capabilities'. This term is used to refer to the generic knowledge, skills and dispositions that all young people will develop for their roles as citizens, workers and members of their local and global communities. There is a range of strategies that aims to embed the Capabilities in the formal curriculum and in processes for assessing and reporting students' learning. (Crafter et al., 2006, p.103)

If 'capabilities' are to form the core and foundation of the new curriculum, then, necessarily, there must be a careful and considered explanation of the concept. The SACE Review offers some initial explanation:

The Review Panel believes that the concept of *Capabilities* offers a powerful way to address the difficult balance between breadth and choice. It provides an approach that encourages breadth by treating student qualities seriously without diminishing the importance of other bodies of knowledge, or restricting choice. In short, the concept of capabilities is a new way of conceptualising the idea of core study. (Crafter et al., 2006, p.105)

and follows this with:

Capabilities are a combination of the knowledge, skills and dispositions that enable people to act in and on the world. They comprise the key ingredients for personal and collective agency. They are important indicators of what a person is able to do and be in different arenas (eg. work, civic and community life) and, thus, the extent to which citizens in any society possess certain capabilities is an important measure of the civic health of that society. Education is a primary site for the development of capabilities in a society, and so capabilities should be central to any curriculum. In summary, student capabilities should encompass the personal attributes required to live, work

and be an active citizen in a changing and globalising world. (Crafter et al., 2006, pp. 105-06)

This explanation is followed by the listing of five capabilities – communication, civic participation, health, well-being and personal development, work and knowledge work – with a short account of what may be involved in each.

At this point it should be stressed that the SACE Review does not put forward these capabilities as the definitive set of capabilities that are to form the core of the new curriculum. The Review makes this point emphatically:

There were many suggestions about the capabilities that might form the basis of a new SACE. (Crafter et al., 2006, p.106)

The five, which were set out with some explanatory detail, were only five of the possibilities:

The capabilities outlined above are intended to be a basis for discussion. It is important that there is ongoing professional and community discussion and systematic inquiry and research about the capabilities that are held to be important, and about the nature of capabilities and their place in the curriculum. (Crafter et al., 2006, p.107)

The point is made again in Recommendation 5:

The Review Panel recommends that:

Capabilities be placed at the heart of the new SACE, and that:

A comprehensive set of student Capabilities be developed through an extensive process of professional and community consultation, using as a basis the draft list identified in this Report.

A thorough research program be initiated to support the development, implementation and evaluation of Capabilities.

A comprehensive program of teacher professional development and community awareness be implemented in order to build professional knowledge so that Capabilities become a central part of the new SACE. (Crafter et al., 2006, p.108)

The consequence is that, at this point in time, there is no firm idea of the nature of the capabilities or their range. They are, however, the core of the new curriculum. The further consequence is that there cannot be and must not be any attempt to implement the SACE Review until and unless the nature of the capabilities has been examined. In this the SACE Review is being eminently reasonable. Too often educational reform is mooted and then rushed into without mature consideration. The SACE Review expects mature consideration to be given to its findings and this cannot be achieved in a short space of time. The matter can, justifiably, be put more strongly. The future of our schools, our teachers and our students is of moral concern for it affects their possible benefit and welfare. To attempt the implementation of the SACE Review's idea of the curriculum without careful and lengthy consideration is immoral.

This paper is offered as part of the necessary consideration of some elements of the listed capabilities.

CAPABILITIES

I start where Socrates and Confucius started and where anyone attempting a rational appraisal must start, with the meaning of what is proposed. What is meant by a 'capability'? This is not sheer pedantry. In the absence of understood meaning there is confusion and a babel of meaning.

On consulting the Macquarie Dictionary (MD) we learn that ‘capability’, the noun, means ‘the quality of being capable’, ‘a quality that can be developed or used;’. The Concise Oxford English Dictionary (COED) gives the meaning as ‘power or ability to do something’. The adjective ‘capable’ means, among other things, ‘having much intelligence, or ability; competent; efficient; able.’ (MD); ‘having the ability or quality necessary to do something’ (COED).

The definition in the SACE Review asserts that a capability refers to that which “enable[s] people to act in and on the world”. This says much the same as the COED. However, the SACE Review goes further and asserts that:

Capabilities are a combination of the knowledge, skills and dispositions that enable people to act in and on the world. (Crafter et al., 2006, p.105)

Is this an allowable definition of ordinary usage or is a new meaning being coined? If the latter, then clarity is essential; otherwise people, whether they be professionals or not, reading the SACE Review and seeking to implement it, at the worst, can be inhabiting different worlds. I say this in the sense of them having a different view of the world.

To be capable of something, in ordinary usage, means being able to do something. The something may be as diverse as riding a bicycle or solving quadratic equations. There is the implication that a level of skill is possessed. Skill levels exist on a continuum. It is possible to ride a bicycle well or poorly though there is a cut-off point below which the skill cannot be imputed. There is no cut-off point at the other end of the continuum, simply the recognition that it cannot be done any better. This continuum refers to the assessment of the skill not the performer. It is possible to say of someone that they ride the bicycle poorly but for their circumstances, well. Similarly, it is possible to say that the student is not very adept at solving quadratics but, for their circumstances, doing well. In normal usage we refer to the possession of such ability as ‘knowing how’.

Since Ryle (1949) it has been recognised that ‘knowing that’ should be distinguished from ‘knowing how’. The first refers to propositional knowledge, the second to a skill or ability. There are, of course, a variety of ways in which knowing is expressed in the English language – ‘knowing about, why, whether, where, and so on. It has been argued that all these are variants of ‘knowing that’ and ‘knowing how’. For instance, ‘knowing when’ is a temporal version of ‘knowing that’, and ‘knowing why’ is a combination of ‘knowing that’ and ‘knowing how’ (Gibbons, 1967; 1979, 2005; in press). There are similarities between ‘knowing how’ and ‘knowing that’. In both cases it is something which is learnt. In both cases standards apply. In both cases nothing is referred to which is being done or which is in the mind. They do not describe a state of performance at a given moment. They are both in fact capacity terms and indicate that the knower is capable of meeting certain criteria. The SACE Review in talking of capabilities has a point. However, though there are similarities, ‘knowing that’ cannot be assimilated to ‘knowing how’ or *vice versa*.

‘Knowing that’ is propositional knowledge and therefore implies that something is or is not the case. Either a person knows something or they do not. They may be mistaken in their belief that they know something and we might be mistaken in attributing knowledge to what they believe but there is no continuum. It is either the case or it is not.

We use knowing that and knowing how in conjunction all the time. In learning to ride a bicycle a person is seeking to acquire a skill. They have to have some notion of the criteria by which the skill is assessed or they will not know when they have made progress towards the acquisition of the skill. To set out to solve a quadratic equation necessitates some idea of the end result. In learning to ride a bicycle the acquisition of the skill may be assessed against two different sorts of criteria – those referring to the skill and those referring to the circumstances of the learner. In

learning to solve quadratics a criterion is successful solution, the personal circumstances of the solver are relevant to the difficulty of the quadratic.

The SACE Review talks of "knowledge and skill". In doing so it obscures both the distinction between 'knowing that' and 'knowing how' and the way in which they necessarily complement each other. As a result 'knowing why' and other usages of knowing are ignored. This is an important error. 'Knowing why', the grasp of an explanation and the ability to construct one, is surely crucial to education in any field.

KNOWLEDGE

The SACE Review makes a specific point with reference to 'knowing that':

Central to these capabilities is the ability to recognise that since knowledge is shaped by the world views and ideologies of those who produce and present it, it is problematic rather than given. (Crafter et al., 2006, p.106)

This is an extremely contentious assertion. The SACE Review appears to assert that knowledge is relative to circumstance, that knowledge is relative to the personal ideologies of those who produce it and this is reflected in the way in which they present it. It is the same view that found expression in the SACS Framework. There is no doubt that world views and ideologies affect what people claim to count as knowledge just as there is no doubt that culture and power affect what is claimed to be knowledge. But this is not to say that what does count as knowledge is determined by world views, ideologies, power or culture. The view that the SACE Review appears to assert is one that is put forward on occasion but which very few would believe if they thought it through and which even those who propose it do not live by. Searle puts it well:

Typically when we act, think, or talk, we take for granted a certain way that our actions, thoughts, and talk relate to things outside us. I represent this as a set of statements, but that is misleading if it suggests that when we are actually talking, thinking, or otherwise acting, we are also holding a theory...when we act or think or talk in the following sorts of ways we take a lot for granted: when we hammer a nail, or order a takeout meal from a restaurant, or conduct an experiment, or wonder where to go on vacation, we take the following for granted: there exists a real world that is totally independent of human beings and of what they think or say about it, and statements about objects and states of affairs in that world are true or false depending on whether things in the world really are the way we say they are. (Searle, 2000, p. 12-13)

It may be rejoined that, for instance, science is about developing theoretical explanations of the world and is therefore always problematic. Certainly quantum physics is a theoretical view, Einstein produced a theory of relativity and so on. It cannot be argued from those examples that all science is theory. The earth is not flat and it spins and wobbles on its axis as it rotates around the sun. There is a force due to gravitation. The blood does circulate in our bodies. There are viruses. Photosynthesis does occur, and so on. The debate about quantum physics only becomes intelligible if there exists an independent reality to which it might refer. In another field, it may be argued that all history is a matter of interpretation but it must not be forgotten that it is the interpretation of events. There are a series of events that are presupposed. Eleanor of Aquitaine and Catherine the Great did exist at certain times. The 1914-18 War did occur. Whether we name those dates by the Gregorian, Persian or European calendar is irrelevant to the occurrence. The people and the events live or lived within a narrative context and without that context they are not understandable. Without that context we are unable to speculate, analyse and theorise. We know a great deal and theorise and speculate about a great deal. The one does not eliminate the other. Theories advance the progress of knowledge.

There is an independent reality and the test for 'knowing that' is whether or not a proposition corresponds to that reality. Our ability to check that correspondence may be, and is, hampered by ideologies, culture and power, but this is not to say that we always fail or that we should cease to try. The very fact that we can recognise what may hamper us provides the possibility of taking measures to avoid the restraints. Learning is the acquisition of knowledge and the exercise of creative imagination within the constraints of evidence and reason and we can take measures to avoid devaluation.

The correspondence test against reality can, on occasion, be misused. For instance, it is common in South Australian schools to teach deductive geometry by asking students to draw and measure geometric figures. This being so, the following may occur. The sum of the internal angles of a Euclidean plane triangle is 180° . Students may be asked to draw a series of triangles of different shapes and then to measure the angles of those triangles. If and when the students produce the result of 180° , then this is said to confirm, support or prove the Euclidean proposition. This is nonsense. The sum of the angles of a Euclidean triangle is so by definition and deduction, experiments are irrelevant. It may be that teachers use the process to enable the students to grasp the idea. To do this they ignore the limitations of the measuring system and the students' ability to measure accurately. If they do not, then the students should record their results as $180^\circ \pm x^\circ$ where x represents their estimate of their inability to measure accurately. The situation is analogous to teachers using objects to enable their young charges to grasp $2 + 2 = 4$. Observing that two objects placed with another two objects makes four objects does not prove that $2 + 2 = 4$. Objectifying the ideas is sound teaching but there should be no notion of proof, confirmation or support put forward. If it is, then consider the damage that it leaves for later years and understanding.

Consequently, I would argue that the SACE Review in the passage quoted about the problematic nature of knowledge appears to be presenting a contentious view and, I would argue, a view to which very few adhere. This is an area that needs a great deal more examination and consideration.

DISPOSITIONS

The SACE Review adds to its account of capabilities the term 'dispositions'. A disposition is:

1. mental or moral constitution; turn of mind.
2. mental inclination; willingness.
3. physical inclination or tendency. (Macquarie Dictionary)

On this meaning, a disposition is an inclination or a tendency which may or may not be exercised. So it may be said of someone that he or she is inclined to be or disposed to be honest or reasonable and the implication is that the person chooses on this occasion to be honest or reasonable but may choose not to be so in the future. Most of the time though he or she is honest or reasonable. If that same person were said to be honest or reasonable in the sense of possessing the virtue of honesty or reasonableness, then he or she becomes the sort of person of whom it may be said that to be dishonest or unreasonable never occurs to him or her. Honesty or reasonableness has become part of whom he or she is. To possess the virtue of honesty or reasonableness is to be in the position of the exercise of that virtue being ingrained. This is not to suggest that temptation is not a possibility. It always is, except for the extraordinary.

Comte-Sponville (2003) is of the view that virtue has been thought to be an acquired disposition ever since Aristotle. Certainly Aristotle is translated as referring to dispositions when talking of the virtues (Bambrough, 1963, II 5). The SACE Review may then be said to be endorsing the acquisition of various virtues. I take the view that virtues are not dispositions and I am doubtful

that Aristotle, in the *Nicomachean Ethics*, was referring to dispositions as I understand them. Hursthouse takes the same view in denying that the virtues are tendencies or dispositions:

But this is not the Aristotelian concept. Despite a few awkward exceptions (friendship, gratitude), a virtue is generally held to be a character trait, a state of one's character. If you have the virtues of, say, generosity, honesty, and justice, generous, honest and just is the sort of person you are. (Hursthouse, 1999, p.11)

Consequently, there are two points of view at least with regard to the term 'dispositions' in the SACE Review. That dispositions are inclinations not traits of character and the opposite view that they are, has been argued since Aristotle. I follow MacIntyre (1981; 1999) and Hursthouse (1999) in arguing that dispositions are not character traits (Gibbons, 2005; in press). However, it would seem that the SACE Review is treating dispositions both as character traits and as inclinations depending on the context. This treatment needs clarification for it makes a difference.

The character of a person is that sum of qualities that distinguishes one person from the next. It is what he or she is. A teacher may prepare a report on a student, which provides an extensive list of the student's achievements and abilities but, left at that, nothing has been said about who that student is and what may be expected of him or her apart from his or her ability to pass particular tests at a particular time. If now the teacher adds to the report that the student is honest and conscientious, loyal and trustworthy, then this starts to say something about the character of the student, that is, the person that the student is. And this last list is not a list of abilities or achievements or tendencies or dispositions but more a list of expectations.

To talk of a person's character is to talk of something deep-seated in that person. A change of character is a marked change which signifies a difference that can lead observers to say that he or she is no longer the same person. For this reason it is to be expected that reliable predictions can be made about the actions of persons where their character is known. And, in the reverse direction, actions can be explained by saying the action was in character. This element of consistency, of expectation, is brought out by the phrase that an action was 'out of character'. Children do not have character traits. They may well have personalities and part of that personality may be that they behave kindly towards other children but we do not think of them when very young as having character traits. These they acquire or not as they mature. Young adolescents for the most part appear to be still acquiring character traits. So they may oscillate wildly between recklessness and timidity, between compassion and indifference until maturity calms the swinging pendulum. Their characters are forming as they confront the world we live in and attempt to deal with it.

Why this excursion into character traits? The SACE Review in its outline of capabilities emphasises the importance of 'building identity' and developing the self. This is to be done through the acquisition of particular capabilities. Capabilities are defined in terms of knowledge, skill and dispositions. At this point the SACE Review is emphasising the development of character traits not dispositions. Moreover there is no indication of the character traits which should or might be developed. This is in contrast to the society in which the education system operates and in contrast to the history of the aims and curriculum of that education system. Education was once looked upon as aimed, in part, at the development of character and, in certain systems of education, there is still an emphatic and overt aim in that direction. I am thinking of the independent schools and the schools with a religious foundation. There is a necessary and close connection between the development of various character traits and what is taught and how it is taught.

On the other hand, the SACE Review talks of developing the inclination to participate in civic affairs, the inclination to act on their *rights and obligations as workers*. This is different from the

development of character traits. If, however, it is meant to include both character traits and inclinations under the umbrella of dispositions then, it is essential that the distinctions are made and spelled out for teachers, students and parents. There is a great deal of work to be done in this area.

The SACE Review emphasises by the use of italics that students should acquire the capability to participate in society in “**reasoned, ethical, civil and respectful ways**”. If the use of these four terms is meant to indicate clear and important distinctions between them then a great deal of elaboration and argument is necessary. As it stands, it is possible to say with justification that there is no distinction to be made for to be civil and to show respect is to be both reasonable and ethical, and to be ethical demands the use of reason. Ethical terms occur throughout the elaboration of Capabilities in the SACE Review. It is well-known that there are a variety of ethical points of view and systematic approaches. Deontological and utilitarian approaches are just two. It may be guessed from what I have said that I incline to virtue ethics. These differences cannot be avoided and there has to be a great deal of argument and elaboration if value terms are to be included in the capabilities.

REFLECTION

The SACE Review in its elaboration of the ‘Capabilities for knowledge work’ lays stress on the development of:

...meta-cognitive capabilities such as *critical and reflective thinking and inquiry*. It also covers the important realm of *ethical thinking and reasoning*. (Crafter et al., 2006, p.106) (italics in the original)

The word ‘reflection’ and its derivatives tend to appear scattered like confetti throughout education documents. It is a classic example of an approval word. That is, its use guarantees that a good thing is being proposed. There is an aura of which the writers of documents make use. Rarely, if ever, is there any attempt to say what is meant by reflection. Referring to meta-cognitive capability serves no useful purpose except to introduce an element of psychological jargon what may or may not throw any light on what is meant by reflection in ordinary usage. I find nowhere in the SACE Review an indication of what is meant by reflection as we ordinarily use the word, and thus how it will be understood by students, teachers and parents. Yet it is clear that something extremely important is being said when the term is used.

What is meant by ‘reflection’? It is a mistake to think of reason as the capacity that divides humans and the rest of the animal world. Our knowledge of the ways in which animals, particularly the primates, act, leads us to the conclusion that they can reason. If we were to view such behaviour in human beings, we would ascribe reason to them. Why should we not do the same with animals? My view is that it is reflection not reason that is the crucial capacity that is the distinctive human way of going about things. It therefore becomes extraordinarily important that we think carefully about the meaning of reflection for, without a doubt, it becomes crucial in the education of human beings.

Consider the phrase ‘rational reflection’. There is here the notion of both reason and reflection and the implication is that they are distinct. They are both concerned with thought but this is not to say that there is no distinction between them. Reflection cannot take place without reason but reasoning can take place without reflection. The crux of the distinction is that in reflection we step back from our thought and review and evaluate. That is, reflection involves thinking about thinking or, as the behavioural sciences would have it, meta-cognition. However, I am wary of accepting meta-cognition as a synonym for reflection. Meta-cognition is a word that operates within a particular type of inquiry and can be expected to have meanings associated with that inquiry, which are not associated with the ordinary language use of reflection. Meta-cognition has

been given some attention in the field of educational psychology in recent years. I shall confine myself to ordinary language usage.

The distinction between reasoning and reflecting is evident in the English language. We may say that we dispute, disagree with or reject a line of reasoning, but it sounds odd to say the same of reflecting. We may say that we should reflect on something but to say the same of reasoning is odd. We reflect 'on' but reason 'about'. We 'check' reasoning but not reflection. Reasoning can be valid or invalid but not reflection, though it might be irrational. None of this divorces reasoning from reflection.

With reflection, in the first instance, we return to previous thinking or thoughts; we revisit them. This is a necessary precursor to giving attention to that past and reflecting on it. If I reflect on the past, I am recalling incidents that may or may not involve myself. I may make a judgement that a wrong move was made or a wrong direction taken. On the other hand, I may pinpoint a decision in the past with which I am pleased because it produced a successful outcome. I may, however, merely recall the past and, as it were, run it before my mind without making judgements but simply noting that it had occurred and observing the links in the chain of a personal narrative. This is recall which does not necessarily involve reflection. Is it possible to reflect on the future? The immediate but incorrect response is surely not, for the very root of the word 'reflection' is connected with the past. It may be said that I may reflect that certain possibilities may or may not arise in the future. I may reflect that this decision now will close or open a door in the future. But reflect on the future?

On this account, reflection is the giving of attention towards past thinking. To reflect is a transitive verb. There must be something to reflect upon, we do not simply reflect. And this can be further broken down into the giving of attention to:

- thinking and this may be in the distant past or that just gone;
- the content of that thinking; and
- the evaluation of that thinking.

In all of these the reflection may be concerned with reasons and reasoning.

But to confine the analysis of reflection to the past is a mistake. What is the point of reflection? We step back and consider and concentrate on the past in order to do a number of possible things, among them:

- to correct previous thinking or plans; and
- to revisit our plans so that we may plan further.

The first presupposes that something has gone awry and we need to rethink the present and the possible future. The second presupposes that we have completed or nearly completed previous plans and need to consider the next move. The introduction of the notion of planning may seem at odds with the assertion that reflection is concerned with the past. Any planning incorporates a future dimension. It also incorporates the ability to imagine the future. Reflection about past or current plans necessarily incorporates a time factor.

The first step in planning may be an attempt to establish the possibilities and evaluate them. For instance, when confronted with a situation the like of which we have not met before, we typically step back from the situation and make a number of possible moves. We may try to determine whether or not masterly inactivity is called for or if we must act. Both masterly inactivity, as the phrase implies, and action, demand an assessment of the results – what happens if I do nothing? What happens if I do this? We speculate. If we decide to do something, then foresight and imagination are involved and planning. But foresight and imagination are also implied in masterly

inactivity. We may attempt to find a suitable comparison between something from our past or the past of others for the situation which confronts us. This is a situation akin to finding an analogous theory in science to use in tackling a new problem. This is a reflective activity. Reflection is necessarily connected with the past and may be connected with the future. Planning necessarily involves reflection and is thus involved with both past and future. The element that takes reflection into the future is imagination. To give attention to the future we must imagine it. Once we have imagined it, then it is possible to reflect upon it. Though in saying this there is the appearance of a step-by-step process, and it is a mistake to think it so. Reflection is both retrospective and prospective.

In order to reflect we must concentrate, that is, we must single out and consider certain aspects of what we have thought or planned or done and we do this by focussing on those aspects to the exclusion of others that may be extraneous and irrelevant. Faced with what ought to be done we have to concentrate on the problem if we are to solve it. Simple attention will not do.

Consider some examples in order to unpack further the concept of reflection.

The deductively valid argument known as the *modus tollens* takes the form:

If A is true then so is B
 B is not true
 ∴ A is not true
 If now we argue;
 If A is true then so is B
 B is true
 ∴ A is true

We commit the logical fallacy of affirming the consequent. Popper (1980) brought to our attention the idea that we can only falsify a scientific hypothesis, we cannot prove it. Lakatos (1978) pointed out that we can do neither. The arguments are basic to the sciences and something that students have to grasp. Clearly these logical forms of argument are used everyday in our lives. If now we stand back and ponder them, reflect on them, it could well occur to us that these forms are presupposed in our language and thoughts about the world. In doing this we are not checking the argument for validity, we are not checking the argument for truth or falsity, we are removed from the chain of argument and reason and are contemplating what the structures might say about the nature of knowledge, the nature of the world and our place in it.

Hume argued that we cannot produce a valid argument by induction. That is, a valid argument cannot proceed from the particular to the general. If we examine an inductive argument then he seems to have a point. If, however, we reflect, we may be inclined to note that human beings disregard the logical niceties in this instance and take inductive arguments to be perfectly acceptable and reasonable every day of their lives. We accept, for instance, the regularity of physical phenomena such as the sun rising and setting.

In both of the above cases we demonstrate that we have a view of the world and what counts as reasonable, good argument and evidence. It is a view of what is to count as rationality.

Consider some more examples. The political ideology in England in the mid-nineteenth century was known as 'political economy'.

Certain almost unshakeable, sincerely held economic beliefs were to underlie all governmental policy...And the greatest of these was that principle of political economy which maintained that you should interfere to the absolute minimum with the market forces of supply and demand because if you *did* so interfere, you

endangered the natural flow by which supplies could reach the market. (Kee, 1982, p.82)

Implementing this principle resulted in a continued large export of food from Ireland to the continent of Europe during the famine years of 1845-49 and the control of any relief for fear of affecting the market. A million died.

There are causal links between the deaths and a number of factors. These links can be analysed biologically, politically, culturally and economically. Reasons can be given for the links. What happens if we stand back from the causal network that has been constructed and evaluate it? It might be said that one sense of reflection occurs when we stand back and examine the validity of the causal links. That is, we look at the evidence for causation and evaluate that evidence. We might, as a result, give weight to some causes over others. We might weigh the strength and weakness of the overall case and this might point the way to further avenues of investigation. However, it seems to me that it is a mistake to call this reflection. It is more properly called reasoning.

Reflection is the thinking in which reasoning is involved but which goes beyond reasoning. We can stand back and evaluate the acts and omissions of the actors in the historical drama. For instance, we might say that the ideology of 'political economy' was morally bankrupt and for the English government to act on the principles of 'political economy' in the way that they did was immoral. We might contrast the government's actions with the Christian virtues of charity and benevolence towards the poor and their needs, which the English government publicly professed. In this we are engaged in making judgements based on criteria that are embedded in our basic ontological and epistemological beliefs. This I would consider merits the term 'reflection'. To reflect is to ponder, to mull over. It is to go beyond the construction of an argument and the checking of that argument. It is to step back and evaluate, and, because the famine was concerned with what happened to and was done to human beings, the evaluation is fundamentally a moral evaluation. In making such an evaluation we measure what happened against what we think ought to have happened. This is to place the matter before criteria that are fundamental to our conception of the world in which we exist. Reflection goes beyond but includes reasoning and it takes place in the context of rationality.

Consider a different example. Crystals take regular forms. They have a certain symmetry. Fluorite is an octahedron. The snowflake crystal has a six-fold symmetry. Iceland spar is rhomboid. In chemistry the student may learn to recognise the various shapes and link them to their chemical composition. Crystals may be grown in classroom experiments. A wealth of detail may be acquired, arranged, analysed and catalogued. It is possible to view the analysis and the catalogue arrangements to see whether or not they have any validity. However to reflect on the appearance of crystals is to confront questions about reality. Why is it that the crystals have flat planes; why is that the fluorite crystal is an octahedron? Pursuing these questions may lead to the thought that the atoms of a crystal are governed by the properties of three-dimensional space. Repeated symmetry is only possible in certain ways. Crystals are natural kinds and the atoms of the crystal are examples of fundamental natural forces. Reflection leads us to considerations about the nature of the world in which we exist.

In order to reflect we must place the thought or the plan or the deed in context. All thoughts, plans and deeds have a history, a narrative which leads to their existence and without which we cannot understand fully the thought, plan or deed. This we need to bring into focus, to concentrate on, if we are to reflect with the possibility of success. Consider $T = 2\pi\sqrt{l/g}$. There is no need to itemise the meanings of the symbols to some people. They recognise it as the equation describing the motion of the simple pendulum. Some of those, a smaller number than the original set, will recognise the equation as arising within a limited system. That is, they will recognise that there

are specific limits set with regard to the arc of swing, friction, elasticity, and so on. A smaller number still will recognise it as part of a revolution in physical science. At what point might it be said that a person reflects on the equation? More than merely recalling the connection of the equation with the simple pendulum is required. More than recalling that if the equation is to be derived from a simple pendulum then limits must be imposed on the system. This is simply a matter of mathematical practice. I would suggest that reflection is the proper description for that which takes place when, with recall as a base, the equation and the physical phenomenon start to be seen in the revolutionary context of which they form a coherent part. It is at this point that we talk of ‘mulling over’, ‘pondering’, ‘appreciating’. This is not to suggest that recall is always a necessary base for reflection.

Elsewhere (Gibbons, 2005) I have argued that, following MacIntyre (1999), the capacity which may be distinctively human is expressed in at least four things:

- the ability to distance ourselves from our beliefs, decisions and actions both in the past and the present;
- the ability to evaluate our beliefs, decisions and actions;
- the ability to imagine and attempt to choose, which presupposes evaluation, our future; and,
- the ability to imagine, which presupposes evaluation, our past.

The four things above express the capacity to reflect. This is the capability, the capacity, with which the SACE Review should be most concerned. It would also be instructive to consider the kinship between the capacity to reflect and the concept which is crucial to the Confucian view of education, the evaluating mind (Munro 1969). The word ‘speculate’ illustrates these elements. The Macquarie Dictionary says that to speculate is:

to engage in thought or reflection, or meditate (oft. fol. by *on*, *upon* or a clause). 2. to indulge in conjectural thought.

Speculation in the above sense often begins with the query – what if? What if the earth moved round the sun; what if I were to ride on a beam of light looking back at a clock; what if the continents are floating and can move? Not all ‘what if’ questions lead to speculation. What if I switch off the electricity connection to this computer? It will shut down. The speculative queries are those which lead a person to question the basis on which he or she views reality. The speculative questions demand the exercise of the imagination. In this sense it becomes clear that speculation is the lifeblood of science. Indeed, it becomes clear that speculation is the lifeblood of all attempts to advance our knowledge.

The concept of ‘regret’ provides further illustration of reflection. We may regret the past, the present or the future. In regretting we always admit that things should have been and should be managed differently while at the same time admitting that this might not be possible. There is always evaluation and that evaluation is against what we conceive as the way the world ought to be. In regretting the past we recall what has happened, we imagine what might have been different and we evaluate what has occurred. In regretting the present we see how it has come to pass and how it may proceed. In regretting the future there is an element of helplessness in the face of what we see impending. To regret is a reflective process that requires reasoning, imagination and evaluation.

HARD CORE

The account given by Lakatos of the nature of science is, in my view, applicable to human beings and their relationship to each other and the world. Lakatos argued:

Newtonian science, for instance, is not simply a set of four conjectures – the three laws of mechanics and the law of gravitation. These four laws constitute only the “hard core” of the Newtonian Programme. But this hard core is tenaciously protected from refutation by a vast “protective belt” of auxiliary hypotheses. And, even more importantly, the research programme also has a “heuristic”, that is, a powerful problem-solving machinery, which, with the help of sophisticated mathematical techniques, digests anomalies and even turns them into positive evidence. (Lakatos, 1978, p.4)

We all develop a personal hard core that we defend tenaciously. Our personal hard core defines what is to count for us as acceptable argument, relevant evidence, and good reasons. That is, it defines for us what is to count as rationality. It may appear therefore that rationality is relative to the individual. However, it must be remembered that the rationality of the hard core is internal to it. The test for truth is the correspondence of that hard core to reality. It is therefore possible to recognise a personal hard core as being relative to the time and the culture of the individual while at the same time, hopefully, seeing it as a step along the road to understanding reality.

The hard core of beliefs of a culture define rationality for that culture and thus for the individuals within and part of that culture. The principle of political economy held by the English Government in 1846-50 can be classed as part of the hard core of beliefs against which proposed actions were measured and decided. The principle defined what was to count as reasonable, evidence and sound judgement in a particular area. The principle is an ontological and epistemological dictum.

The hard core of beliefs of an individual define for that individual what are to count as reasons, evidence and sound argument. Reflection and learning to reflect takes place in the context of the hard core. Rationality is only intelligible in the context of the ability to reflect and the hard core defines rationality. Consequently, we may say that there is a capacity to reflect which, for its exercise and development, requires a hard core of belief which is the basis of the ontological and epistemological beliefs of an individual. We start to differ, as far as we know, from the animals when we start to develop the capacity to stand back from our needs and desires and judge whether or not they are worthwhile. We reflect rather than simply reason. The initial notion of worthwhileness is with reference to what it is worthwhile for me to do, what it is best for me to desire. And this is assessed against my small world and my place and the place of others in that small world. The child growing up in a Confucian based culture in South East Asia develops a hard core which is, in part, significantly different from the hard core of a child growing up in an Anglo-Saxon culture. Consider, for instance, the contrast between the family centred Confucian based culture and the individualistic Anglo-Saxon culture. The concept of democracy in a Confucian based South East culture is family centred; in the United States it is seen in terms of Adam Smith’s justified self-interest. How does this sit with what the SACE Review says about the importance of democracy flourishing? What will count as reasons, evidence and sound argument will, in part, differ between them. I say ‘in part’ in the acknowledgement that their views of the world will not be totally different but will intersect. With development, this view of the world enlarges and the measure of what counts as worthwhile and rational enlarges and becomes more complex encompassing reflection on the past and consideration of the future. This is a process of education, some would say a crucial aim of education. The development of a reflective human being is not the development of, on the one hand, a capacity to reflect, and, on the other hand, a hard core of ontological and epistemological beliefs. They are interdependent. The aim of both informal and formal education should be to develop both. The capacity to reflect is developed through encouraging the child to imagine, to speculate, to ponder, to evaluate. But there must be something on which and against which reflection takes place. The hard core is developed through the formal and informal processes by which children acquire their view of the

world and their place in it. It is a mistake to think that the hard core is composed of empirical beliefs and moral principles. The human being is not that simple. Religion, myth and beliefs which are fervently held but for which there is no evidence may all be present. The 'Dreaming' of Australian Aboriginals plays a very real part in the hard core of those peoples. The Icelandic sagas still form part of the hard core of that culture (Smiley, 2000). Many cultures imbue in their peoples a long memory for past concerns and wrongs.

The hard core will be subject to attack either from others or from an individual's own observations of reality. The response to attack is the defence of auxiliary hypotheses. This is not to say that there can be no change in the hard core of a culture or a person. Clearly this can happen and does. History is witness to that.

The narrative of a human life is called upon when we reflect on whether or not this should have been done or believed or whether or not we should do this or that, believe this or that. Reflection here involves who the human being is and his or her stance to the world. Reflection in any practice, whether it is science, fishing or painting brings into play, for the reflecting human being, that human being's connection with and view of, the world of his or her existence. The examples of reflection above indicate that the attempt is to make and retain a coherent, consistent account of the world of our existence. It is to seek harmony.

What a human being needs to flourish is to develop a justifiable hard core, the capacity to reflect and a narrative context of the world in which they exist. This must be the prime objective of education both formal and informal, and it lies behind all the capabilities of the SACE Review if those capabilities are to be meaningful.

These thoughts on reflection have been an attempt to unpack what may be meant by the use of the term in the SACE Review. If nothing else, it has been demonstrated that the matter is complex. I would argue further that far too little attention is given to this favoured word, 'reflection', yet it is so distinctive of a flourishing human being¹. No sphere of our thought and action is complete without it. Certainly it lies behind everything that appears in all the capabilities that are named in the SACE Review. Without the capacity to reflect they are non-entities. So perhaps we need to think far more carefully and at length about what it is to reflect.

There are other issues in Chapter 6 of the SACE Review that should be addressed but which are not possible to pursue in the short space of this paper. As Recommendation 5 indicates, there is much to do. However, from the point of view of my research interests there is an interesting paragraph on p.107. This paragraph sets out the notion that subjects and disciplines are also the means by which broad capabilities are developed.

...capabilities are a higher-order outcome of the learning of subject or disciplinary knowledge and processes, but are not independent of such learning. Nor do they compete with subject knowledge. They are developed *through* subject knowledge, which continues to be important in its own right. The interplay between capabilities and disciplinary knowledge will be central to teaching and learning. (Crafter et al., 2006, p.107)

My research over the last four years into precisely this area (Gibbons, 2005; Gibbons, in press) convinces me of the importance of these propositions and the need to develop them thoroughly.

¹ The arguments concerning what it is for a human being to flourish have developed from their statements by Confucius and Aristotle through to the work of Anscombe (1995), Foot (1978a; 1978b; 1978c; 1994; 1995), Hursthouse (1999), McDowell (1995) and MacIntyre (1981; 1988; 1990; 1991; 1994; 1999). My account (Gibbons, 2005; Gibbons, in press) relies on their work though they may not agree with some of my interpretations.

REFERENCES

- Anscombe, G. E. M. (1995). Practical Inference. In R. Hursthouse, G. Lawrence, and W. Quinn (Eds.), *Virtues and Reasons*. Oxford: Oxford University Press.
- Bambrough, R. (1963). *The Philosophy of Aristotle*. New York: Mentor.
- Comte-Sponville, A. (2003). *A Short Treatise on the Great Virtues*. London: Vintage.
- Crafter, G., Reid, A., & Woods, R. (2006). *The SACE Review*. South Australia: Government of South Australia.
- Foot, P. (1978a). Goodness and Choice. In P. Foot (Ed.), *Virtues and Vices and Other Essays in Moral Philosophy*. Oxford: Blackwell.
- Foot, P. (1978b). Euthanasia. In P. Foot (Ed.), *Virtues and Vices and Other Essays in Moral Philosophy*. Oxford: Blackwell.
- Foot, P. (1978c). Virtues and Vices. In P. Foot (Ed.), *Virtues and Vices and Other Essays in Moral Philosophy*. Oxford: Blackwell.
- Foot, P. (1994). Rationality and Virtue. In H. Pauer-Studer (Ed.), *Norms, Values, and Society*. Amsterdam: Kluwer.
- Foot, P. (1995). Does Moral Subjectivism Rest on a Mistake? *Oxford Journal of Legal Studies*, 15, 1-14.
- Gibbons, J. A. (1967). The logical presuppositions of 'Knowing that' and their relevance to Education. (Masters thesis, Manchester, 1967).
- Gibbons, J. A. (1979). Curriculum Integration. *Curriculum Inquiry*. 9:4, 322-332.
- Gibbons, J. A. (2005). *On Reflection*. Adelaide, South Australia: Shannon Research Press.
- Gibbons, J. A. (in press). *Reflection, Science and the Virtues*. Rotterdam: Sense Publishers.
- Hursthouse, R. (1999). *On Virtue Ethics*. Oxford: Oxford University Press.
- Kee, R. (1982). *Ireland: A History*. London: Sphere Books.
- Lakatos, I. (1978) *The Methodology of Scientific Research Programmes*. Cambridge: Cambridge University Press.
- MacIntyre, A. (1981). *After Virtue*. London: Duckworth.
- MacIntyre, A. (1988). *Whose Justice? Which Rationality?* Indiana: University of Notre Dame Press.
- MacIntyre, A. (1990). *Three Rival Versions of Moral Enquiry*. Indiana: University of Notre Dame Press.
- MacIntyre, A. (1991). Incommensurability, Truth, and the Conversation Between Confucians and Aristotelians about the Virtues. In E. Deutsch, ed., *Culture and Modernity: East-West Philosophic Perspectives*, (pp. 104-122), Honolulu: University of Hawaii Press.
- MacIntyre, A. (1994). A Partial Response to my Critics. In J. Horton, and S. Mendus (Eds.), *After MacIntyre*. Indiana: University of Notre Dame Press.
- MacIntyre, A. (1999). *Dependent Rational Animals*. Illinois: Open Court.
- McDowell, J. (1995). Two Sorts of Naturalism. In R. Hursthouse, G. Lawrence, and W. Quinn (Eds.), *Virtues and Reason: Philippa Foot and Moral Theory: Essays in Honour of Philippa Foot*. Oxford: Clarendon.

- Munro, D. J. (1969). *The Concept of Man in Early China*. Stanford: Stanford University Press.
- Popper, K. (1980). *The Logic of Scientific Discovery* (10th ed). London: Hutchinson.
- Ryle G. (1949). *The Concept of Mind*. London: Hutchinson.
- Searle J. (2000). *Mind, Language and Society: Philosophy in the Real World*. London: Phoenix
- Smiley J. (Ed.). (2000). *Sagas of the Icelanders: The Preface*. England: Penguin

A view from outside the confines of South Australia

John P. Keeves

School of Education, Flinders University john.keeves@flinders.edu.au

The SACE Review report, Success for All, completely ignores two important issues, namely, (a) the portability of the certificate, and (b) the nature of secondary schooling in a future that is set in a global world. The Review saw the South Australian education system operating in a context that was limited to the geographical and cultural boundaries of the state. This paper discusses both of these issues that appear to require the resolution of conflicting and incompatible problems. In conclusion the paper considers the changing nature of schooling and the role of alternative education in both schools and programs and rejects the continuance of comprehensive schooling at the upper secondary school level within a bureaucratic education system. The paper argues that different types of schools should be gradually established through the self-management and self-governance of schools by the communities served and the choices made by the students who attend the schools and their parents, and who support them while they are engaged in upper secondary education.

Certification, selection, alternative schools, future of schooling, self-governance

INTRODUCTION

During the second half of the twentieth century there was a remarkable expansion of secondary education in many of the highly developed countries of the world. Australia and the state of South Australia were heavily involved in this expansion. Furthermore, there was a marked change in the content of the secondary school curriculum from the early 1960s onward to take into consideration the substantial growth in knowledge that had occurred during the previous 100 years. These developments led to further changes in the manner in which teaching and learning took place in secondary schools, and it cannot be assumed that the time for change has passed. Indeed it must be argued that further change is long overdue and cannot be held back. Consequently, the SACE Review must be considered to be timely.

Nevertheless, it is argued in this paper that the issues are very much more complex than the SACE Review panel has envisaged from the material presented in its report *Success for All*. The full gamut of issues that need to be taken into consideration cannot be presented in one brief paper. Other papers in this volume draw attention to the failure to consider evidence from educational research and the limited information that is available in South Australia which bears on these problems. Moreover, little attempt would appear to have been made in the SACE Review to assemble the available research findings and reports that address the many issues that very clearly exist.

This paper is limited to considering two issues that arise from viewing the South Australian education system as operating in a context that extends well beyond the geographical and cultural boundaries in which the people of South Australia live. The Government of the state of South Australia is no longer running an isolated school system. South Australia is also a small state that must provide for education within an Australian system, with a flow of students in and out of the state and the country during their years of schooling and tertiary studies. Moreover, Australia is a relatively small, although affluent country, with a high level of human development set in the

Asia Pacific region, but with traditional and strong ties to the United Kingdom, Europe and the United States, upon which its culture is largely based.

The SACE Review report totally ignored consideration of the two issues addressed in this paper that arose from outside the geographical and cultural boundaries of the state.

These issues are:

- (a) the portability of the South Australian Certificate of Education both within and outside Australia and over time, and
- (b) the nature of secondary schooling in a future that is set in a global world.

The complexity involved in addressing these two issues is that they appear to require the resolution of conflicting and incompatible problems.

THE PORTABILITY OF THE SOUTH AUSTRALIAN CERTIFICATE OF EDUCATION

It is essential that the South Australian Certificate of Education should be portable across the countries of the developed world and, in particular, across the countries of the Asia Pacific region. Not only do students come from countries within this region to study in South Australian schools and institutions of higher education, but there is currently demand from schools in some countries of the region for their students to prepare for and sit for the SACE examination in their home country. The certificate serves the purpose of selection and certification, as well as being a gateway to adult life, not only inside but also outside South Australia. Consequently, the certificate must be based on evidence that the holder has studied curricula which are sound preparation for both work and further study in clearly identifiable fields of learning that may be required by particular employers or by particular educational institutions in different parts of the world, and to enable participation as adults in a complex society.

The demands for this evidence require that comparability of student achievement and development must be consistent with the standards of performance attained by students in other states of Australia. Consequently, it is necessary that:

- (a) curricula in particular fields of learning are comparable across states, and that a process of curricular moderation operates to ensure comparability;
- (b) a single index for level of performance is provided across a range of fields of learning, in general no less than five fields, in order to ensure that study in the final years of schooling is broadly based and with substantial depth in selected fields; and
- (c) procedures for equating levels of performance across states of Australia, across fields of learning, and where necessary across educational institutions and sectors within the state of South Australia, are employed in the calculation of an index for the level of performance achieved.

In addition, there is a need to assess social and emotional development in ways that are meaningful across a wide range of situations both inside and outside Australia.

Without the maintenance of such portability, there would be the serious danger that holders of the South Australian Certificate of Education would be disadvantaged in pursuing further study or obtaining employment in another state of Australia, or in another country, or at a later time in the holder's working life.

The functions of selection, certification and gate-keeping prior to entry to adult life may be seen to overlap or may be seen to differ to the extent that different indicators are employed to serve

each function separately. If more than one indicator is assessed, then the different indicators employed need to provide the required portability for the purposes of selection and certification, as well as an act of gate-keeping for a wide variety of situations. Life in the so-called 'global world' is a very real option for those students graduating from high school in the twenty-first century.

THE NATURE OF SCHOOLING IN THE FUTURE

The nature of schooling, particularly upper secondary schooling, must inevitably change over the next 40 years in response to the advent of information and communications technology, globalisation and the need for learning throughout life. Approximately 40 years ago the public examination system in South Australia underwent considerable change, in which the admirable flexibility of the existing system was lost in efforts to raise the standards of entry to the two universities that would soon be operating within the state. It is clearly evident that over the next 40 years educational institutions at all levels of schools, universities, technical colleges and centres of lifelong learning and development, as well as use of the media, will need to respond to the demands of rapid technological, social and economic changes. Clearly, plans must be made now. There is, however, the danger that preoccupation with the short term political demands of much decision making in the field of education may prevent serious efforts being made in thinking and planning for the future,

The Centre for Educational Research and Innovation (CERI) within the Organisation for Economic Cooperation and Development (OECD) is undertaking a multiphase project concerned with 'Schooling for Tomorrow'. One of the outcomes of the first phase of this project was the development of six scenarios for schooling in the future. The scenarios were organised under three groupings. These are listed on the OECD website (www.oecd.org).

Attempting to Maintain the Status Quo

1. The "Bureaucratic School Systems Continue" Scenario.

The findings of unpublished research in Australia suggest that educational leaders in Australia expect Scenario 1 to continue.

Diverse, Dynamic Schools after Root-and-Branch Reform ("re-schooling")

2. The "Schools as Focused Learning Organisations" Scenario.

At Flinders University and at Adelaide University adjacent to their Schools of Education, which are Teacher Education Institutions, there are two very different institutions that have recently been established to focus on the fields of learning in science and mathematics. Both these schools are undertaking developmental work that would appear to be consistent with this second scenario. Furthermore, as a Federal Government initiative, new technical colleges are being planned for the South Australian education system that will establish institutions of both technical and technological education for school-aged young people. In addition, in South Australia there are already in existence several adult re-entry schools that attract sizable numbers of students. It should be noted that these schools were not taken into consideration in the SACE Review.

3. The "Schools as Core Social Centres" Scenario.

There is the danger that schools will develop in South Australia that are modelled on the examples, which appear on television in weekly programs from the United States where adolescent social life revolves around attendance at high schools that are merely Core Social Centres that focus on particular aspects of social development without concern for aspects of their

intellectual development. In these schools the only intellectual activity portrayed is the collecting of results on a Scholastic Aptitude Test for entry to a prestigious college.

The Pursuit of Alternatives as Systems Disband or Disintegrate (“de-schooling”)

4. The “Extending the Market Model” Scenario.

A secondary school currently operates within the City of Adelaide where students are taught during the last two years of schooling in preparation for entry to university. A section of this school is conducted for profit by a commercial organisation that is listed on the Australian Stock Exchange.

Within this scenario, schools are encouraged to compete for students and the financial resources that they bring, through vouchers and focused grants.

5. The “Learning Networks and the Network Society” Scenario.

At the adult level in South Australia, a recent research study reports that informal network social groups exist in country regions to pass on information, thereby replacing activities that were formerly undertaken by Colleges of Technical and Further Education (TAFE).

6. The “Teacher Exodus and System Meltdown” Scenario.

With the aging of the teacher workforce, particularly at the upper secondary school level, there is some evidence that the teaching of the subjects of Science, Mathematics and Foreign Languages is collapsing under the strain imposed by the shortage of qualified teachers. Male teachers are disappearing from the teacher workforce, and male students in teacher education programs are apparently declining in number, particularly in the fields of science, mathematics and ICT.

The Second Phase of the “Schooling for Tomorrow” Project has focused on such issues as the ‘demand for schooling’ and the ‘personalisation of learning’ in order to develop a range of innovative approaches. In the Third Phase, attention is being directed towards the identification of key trends that are helping to shape the future of education. The OECD is well placed to investigate these problems in a strategic way because it is international and has ready access to rich and extensive sources of data.

While South Australia is listed on the OECD website as being involved in the Third Phase of this Project concerned with ‘Schooling for Tomorrow’, the SACE Review report *Success for All* neither looked outside the South Australian setting, nor made any suggestions that there were clearly specified scenarios for the future of schooling. Nor did the SACE Review Report undertake an examination of what schooling might look like 40 years ahead both in other parts of the world or within the state of South Australia. Moreover, the Review Panel seemed completely unaware that any thinking was already being done within South Australia about ‘Schooling for Tomorrow’.

RESOLVING THE CONFLICT BETWEEN THE TWO ISSUES

The two issues raised above, namely portability and flexibility appear, at least superficially, to be in conflict. The former issue requires that the certificate must have portability, which implies that for some students the highest academic standards must be maintained through both rigorous courses and rigorous assessment procedures. However, the latter issue, particularly, the development of the ‘Schools as Focused Learning Organisations’ Scenario requires that innovative educational programs need to be developed through alternative approaches to schooling. Such schools may have different foci, that involve different curriculum content,

different learning processes, and different developmental outcomes. The South Australian education system can already handle schools with very different foci as the Mount Barker Waldorf School can testify, both through attaining high educational standards that enable its graduates to enter universities within and outside the state of South Australia as well as in their subsequent high levels of performance at the university level.

The existing South Australian system of both selection and certification has much to commend it. The Senior Secondary Assessment Board of South Australia (SSABSA) has quietly and efficiently conducted its business during recent years and has carried out some valuable research studies that are totally ignored in the SACE Review report. The work of SSABSA is also completely neglected both in a review of the past and in planning for the future. It appears that its independence from the State Government Education Department has led to a latent proposal that it should be submerged within a declining bureaucracy.

The SACE Review report fails to indicate how the two issues that are raised in this paper can be resolved. Moreover, it does not indicate an awareness of these issues that both involve a perspective from outside the confines of the state of South Australia.

CHANGING THE NATURE OF SCHOOLING

The issue in changing the nature of schooling is that it should be undertaken with an increase in the quality and strength of the education provided for the growing numbers of students who continue with their education during the post-compulsory years of education and who view education as a lifelong process. The maintenance of a comprehensive school system with a bureaucratic structure is no longer a meaningful approach. The movement towards self-management and self-governance of secondary schools is becoming established not only in Australia but also in many developed and developing countries across the world. It is in a context of growing self-management and self-governance of schools that the future of schooling in South Australia would appear to lie.

The scenario that views 'schools as focused learning organisations' is the most promising of the six scenarios advanced for consideration by the OECD. Beare has emphasised that:

Good schools have clear educational aims. ... Good schools target learning outcomes. ... Good schools concentrate on teaching and learning. They understand that their core task is educating, they devote more classroom time to that task, their teachers direct their energy to academic learning, they test regularly for achievement. (Beare, 1993, pp. 73-74)

This view argued by Beare did not imply that all schools should be the same and should provide the same comprehensive educational program. Different groups of students have different needs, different interests and different capacities to succeed at the post compulsory level of schooling, in post-secondary educational institutions, and in life-long learning programs. At the upper-secondary school level, different types of 'focused learning organisations' are needed, but entry to these organisations must be made through choice, prior experience, and prior performance. A certificate must clearly indicate the choices made, the prior experiences entered into and the standards of performance attained. Moreover, such a certificate must be recognised and have portability not only throughout Australia, but also throughout the countries of the Western world.

TOWARDS THE FUTURE

At a time of change, when schooling for a future of perhaps 40 years on is under consideration, a strong core education system is required in each Australian state, as well as across Australia as a

whole. Nevertheless, there is an important role for different types of alternative education programs and alternative schools.

Nagata (2004, p. 209), writing about international perspectives of alternative education, states from a study conducted in nine countries:

I have given much thought to the social function of alternative education as a minority form of education. This means, in other words, leaving some space open in a system in order to allow a certain degree of adventure and unconventionality, or moderate discretion, even if it strays from the standard. It could also mean adding about 10% of play, and inserting it in the social system.

The idea of 'equity' or 'fairness' in education does not necessarily involve the development of a comprehensive education system with all secondary schools providing the same educational fare for all students and in order to reduce the existing differences between Australian schools. It involves a freedom of choice between different types of educational experiences, and in different types of schools leading to different educational outcomes. However, all schools must seek to maintain high standards of education that are widely recognised and lead on to an appropriate form of further education, by choice, by prior experience, and by the attainment of acknowledged standards of performance. The differences between different types of schools, whether public or private, academic or vocational, comprehensive or selective, metropolitan or rural, large or small, and single sex or coeducational would seem to be best determined through self-governance by the community served and the choices made by students and their parents, rather than by bureaucratic decisions or political ideology. The way ahead is not through radical change or the restructuring of an examination system and the certificate it provides, but through the gradual evolution of schooling of high quality at the post-compulsory level. Furthermore, any change must be introduced as the consequence of sound research, together with a systematic monitoring of the effects of change in outcomes over time, commencing prior to the introduction of change.

However, the introduction of change needs to provide guided assistance for alternative schools and guided support for all schools to identify their unique focus as learning organisations. At the same time it is necessary to maintain a solid core of schools that provides an education of high quality and that makes full use of the very considerable degree of flexibility that is currently available through the Senior Secondary Assessment Board of South Australia.

REFERENCES

- Beare, H. (1993). Quotation, pp.73-74. In H. Beare and R. Slaughter (1993). *Education for the Twenty-First Century*. London: Routledge.
- Nagata, Y. (2004). *Alternative Education: An International Perspective*. (Flinders University International Institute of Education Research Collection) Adelaide: Shannon Research Press.
- OECD (Organisation for Economic Co-operation and Development. (2006). *Building Partnership for Progress*. [Online]. Available: <http://www.oecd.org> [June, 27, 2006]

Appendix



FLINDERS UNIVERSITY
ADELAIDE • AUSTRALIA

**SAIER and FUIIE Spring
Seminar Series**

RESEARCH ISSUES ON THE FUTURE OF POST-COMPULSORY SECONDARY EDUCATION IN SOUTH AUSTRALIA

The South Australian Institute for Education Research (SAIER) and the Flinders University Institute for International Education (FUIIE) will conduct two seminars focusing on post-compulsory secondary education in South Australia. The series is designed to promote discussion and debate around South Australian post-compulsory secondary education, with a special emphasis on the roles of research and credentialing systems (specifically SACE and ACE). Each seminar will include presentations by leaders in educational curriculum and research.

Seminar 1: Research and the Australian Certificate of Education

(5.00 p.m. – 7.00 p.m., August 29th 2006)

- Chairperson: Ms. Felicity Lewis, Mayor of Marion
- Professor Geoff Masters (CEO of Australian Council for Educational Research). Professor Masters has played a leading role in state, national, and international developments in assessment. He will talk about the recently released ACE report, focusing specifically on the research needed to further develop that proposal.
- Professor John Keeves (Professorial Fellow, Flinders University Institute of International Education, School of Education, Flinders University). Professor Keeves has over 40 years of experience in state, national, and international assessments. He will present research findings showing how Australian state educational standards have changed markedly over the recent decades.

Seminar 2: Research and the South Australian Certificate of Education Review

(5.00 p.m. – 7.00 p.m., September 5th 2006)

- Chairperson: Dr. Bob Such, MP.
- Dr. Paul Kilvert, Executive Director of Strategic Policy and Planning, DECS. Dr. Kilvert is heading the SACE Review Implementation Steering Committee. Dr. Kilvert will talk about research and the South Australian Certificate of Education Review.
- Dr. Tony Gibbons (member of FUIIE). Dr. Gibbons is a specialist working primarily on philosophical issues. He will talk about the understandings of knowledge that underpin the proposed new SACE.

- Dr. Kelvin Gregory (Flinders University Institute of International Education, School of Education, Flinders University). Dr. Gregory is a research specialist and psychometrician, working on national and international large-scale assessment programs. He will talk about research matters in the SACE Review Final Report.

Each seminar will provide opportunities for questions from the audience through a chairperson.

The seminar series will be held in the Sturt Lecture Theatre (N335) at Flinders University. A gold coin donation is requested to cover the cost of refreshments.

Register by sending an email to Dr. Marietta Rossetto. Papers written by each presenter will be made available as a pdf file to all people who register by August 20th.

Copies of the papers will be available at each seminar for nominal cost of \$15. Final versions of these papers will be published in a special edition of the International Education Journal (<http://ehlt.flinders.edu.au/education/iej/>).

Further information can be obtained by contacting:

Dr. Ted Sandercock
Chairperson of SAIER
(08) 8556 4535
sanderwt@westnet.com.au

Dr. Marietta Rossetto
S301A, Sturt Buildings
School of Education
Flinders University of South Australia
(08) 8201 5637
Marietta.rossetto@flinders.edu.au