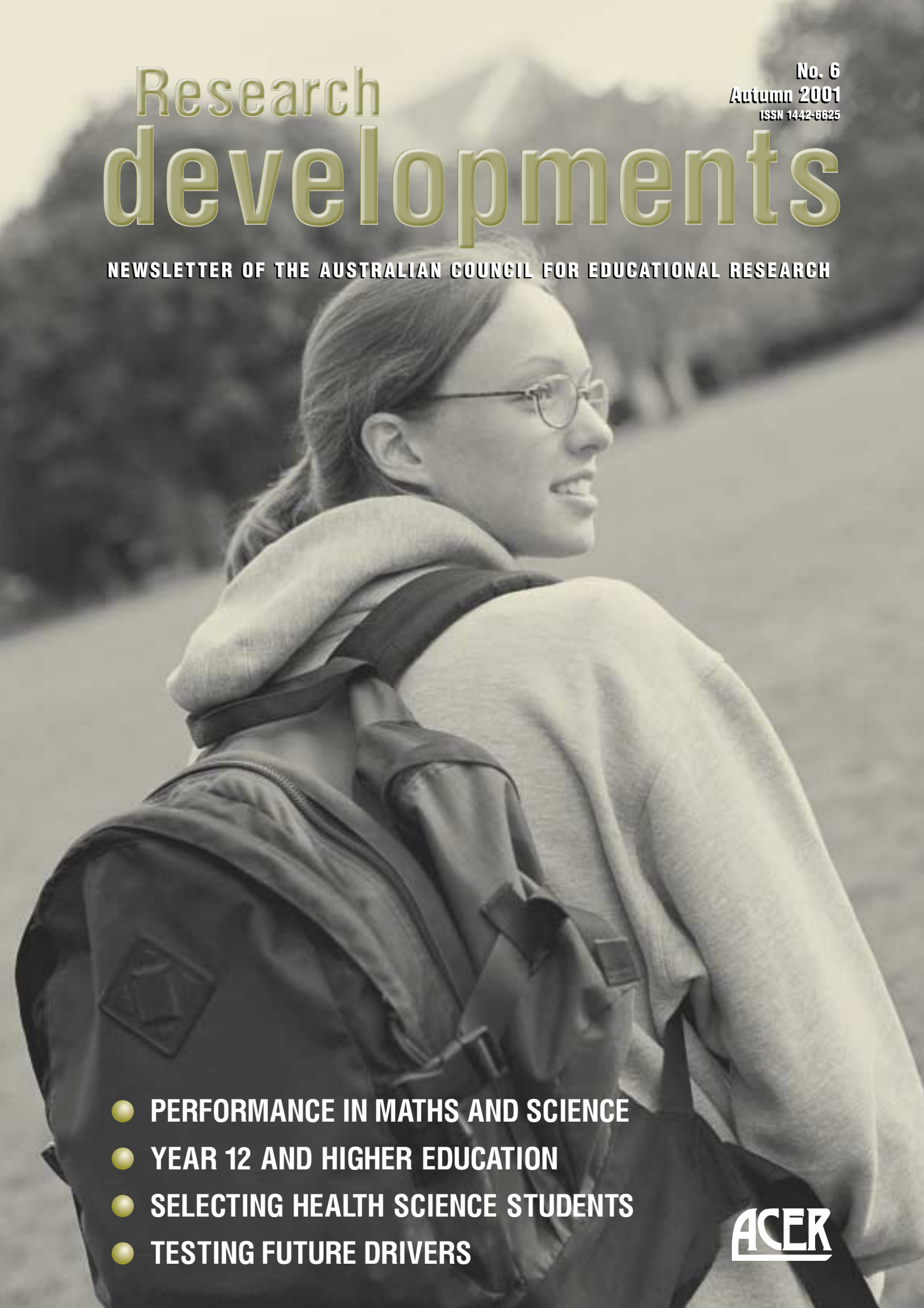
No. 6
Autumn 2001
ISSN 1442-6625

Research developments

NEWSLETTER OF THE AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH



- PERFORMANCE IN MATHS AND SCIENCE
- YEAR 12 AND HIGHER EDUCATION
- SELECTING HEALTH SCIENCE STUDENTS
- TESTING FUTURE DRIVERS

ACER

Australian students world-class in maths and science

Australian junior secondary students are performing well above the international average in mathematics and science, according to the results of an international survey.

The Third International Mathematics and Science Study-Repeat (TIMSS-R) aimed to assess how well students in different countries are able to solve mathematical and scientific problems. In addition, TIMSS-R collected an extensive range of information about curricula, teaching practices and the factors that influence students and teachers inside and outside the classroom.

In science, only Taiwan's average performance was better than Australia's, with Australian students performing at a level equal to 15 other countries, including Singapore, Japan, Korea, England, Canada and Hong Kong. Countries performing below Australia included the United States, New Zealand and Malaysia.

In mathematics, Australian students performed above the international average, but were out-performed by students from Singapore, the Republic of Korea, Taiwan, Hong Kong, Japan and Belgium (Flemish speaking). Countries performing below Australia included the United States, England and New Zealand.

"Overall, these are pleasing results for Australia. They confirm that Australian students are receiving a world-class education. The challenge now is to improve even further and to move into the group of countries that consistently come out on top in mathematics and science," Professor Geoff Masters, Executive Director of ACER said.

The study involved 38 countries. On average 170 schools and 4000 students participated in TIMSS-R from each country, selected as a representative sample of the overall student population. Australian students in the study were in Year 8 in New South Wales, Victoria, the Australian Capital Territory and Tasmania, and Year 9 in Queensland, South Australia, Western Australia and the Northern Territory. The study investigated achievement in mathematics and science in 1999, and enables comparisons with a similar study in 1995. In Australia the tests were held at the end of the school year in 1994 and 1998. The 1998 study does not provide state-by-state comparisons.

In science, 19 per cent of Australian students were in the top 10 per cent in the world. Australian students' best relative performance was in the area of Environmental and Resource Issues, but they were above the international average in all areas of science.

In mathematics, 12 per cent of Australian students were in the top 10 per cent in the world. Australian students' best performances were in measurement and in data representation, analysis and probability, but they were above the international average in all areas of mathematics except geometry.

"The performance of Australian lower secondary students in mathematics and science continues to be impressive. Particularly encouraging is our performance in science. Australian students performed near the international average in 1995, but were significantly above the average for those same countries in 1999," Professor Masters said.

In Australia, half of the funding for the study came from the Commonwealth government, and the rest from the states and territories according to their student population.

ACER was the national coordinator for Australia, responsible for implementing the project according to the international procedures and conducting the testing. Both TIMSS and its continuation, TIMSS-R, are studies of the International Association for the Evaluation of Educational Achievement (IEA).

Further information is on the ACER web site (www.acer.edu.au), and the full international report is available on the internet (isc.bc.edu/timss1999.html). The full Australian report will be available in the middle of the year.

The test

Students completed a 90-minute test of mathematics and science questions. The question formats were multiple-choice, short-answer and extended response.

The tests covered the following content areas:

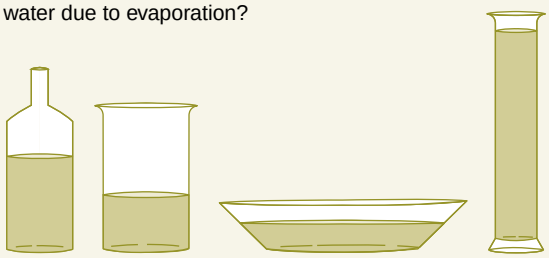
Mathematics – Fractions and number sense; Algebra; Geometry; Data representation, analysis and probability; Measurement.

Science – Earth science; Life science; Physics; Chemistry; Environmental and resource issues; Scientific inquiry and the nature of science.

Sample Science Question

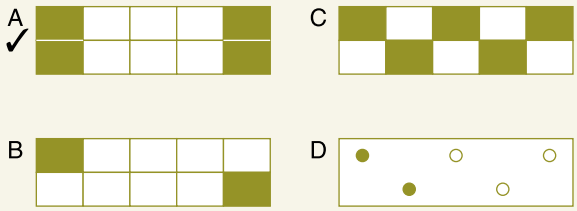
A student put 100 mL of water in each of the open containers and let them stand in the sun for one day.

Which container would probably lose the most water due to evaporation?



Sample Mathematics Question

Which picture shows that $\frac{2}{5}$ is equivalent to $\frac{4}{10}$?



Relative Country Achievement

When comparing the results relative to Australia, participating countries can be divided into three groups. Countries in the first group are those whose average achievement is significantly higher than Australia's; in the second group of countries are those with similar achievement results to Australia's; and in the third group are those countries whose results are significantly lower than Australia's. Countries in each group are listed on the basis of their average scale score.

Relative Country Achievement in Mathematics

GROUP 1 Average achievement significantly higher than Australia's

Singapore
Korea, Rep of
Chinese Taipei
Hong Kong SAR
Japan
Belgium (Flemish)

GROUP 2 Average achievement the same as Australia's

Netherlands
Slovak Republic
Hungary
Canada
Slovenia
Russian Federation
Australia
Finland
Czech Republic
Malaysia
Bulgaria

GROUP 3 Average achievement significantly lower than Australia's

Latvia (LSS)
United States
England
New Zealand
International average
Lithuania
Italy
Cyprus
Romania
Moldova
Thailand
Israel
Tunisia
Macedonia, Rep of
Turkey
Jordan
Iran, Islamic Rep
Indonesia
Chile
Philippines
Morocco
South Africa

Relative Country Achievement in Science

GROUP 1 Average achievement significantly higher than Australia's

Chinese Taipei

GROUP 2 Average achievement the same as Australia's

Singapore
Hungary
Japan
Korea Rep of
Netherlands
Australia
Czech Republic
England
Finland
Slovak Republic
Belgium (Flemish)
Slovenia
Canada
Hong Kong, SAR
Russian Federation
Bulgaria

GROUP 3 Average achievement significantly lower than Australia's

United States
New Zealand
Latvia (LSS)
Italy
Malaysia
Lithuania
International Average
Thailand
Romania
Israel
Cyprus
Moldova
Macedonia, Rep of
Jordan
Iran, Islamic Rep
Indonesia
Turkey
Tunisia
Chile
Philippines
Morocco
South Africa

Participation in Year 12 and

Students who complete Year 12 and participate in higher education are more likely to be female, students with language backgrounds other than English, or students from metropolitan areas, according to a recent report by ACER.

The report forms part of the Longitudinal Surveys of Australian Youth (LSAY) program that ACER manages jointly with DETYA.

The concept 'educational disadvantage' may need to be re-evaluated, according to the report. Attributes that have been considered detrimental to educational participation, such as being female and having a language background other than English, now have strong positive effects on educational participation.

Factors influencing participation

Socioeconomic background

The report, *Patterns of Participation in Year 12 and Higher Education in Australia: Trends and Issues*, found that participation in Year 12 and higher education is more a product of student achievement than social background. How well students perform in literacy and numeracy is a much better predictor of their subsequent educational participation than are their social characteristics. Cultural factors (measured by parents' education) have a stronger relationship with participation than wealth (measured by home possessions). Although socioeconomic background remains an influence on educational participation, its effect is declining, suggesting that Australian educational authorities have made progress towards an education system based more on merit than on a student's social characteristics.

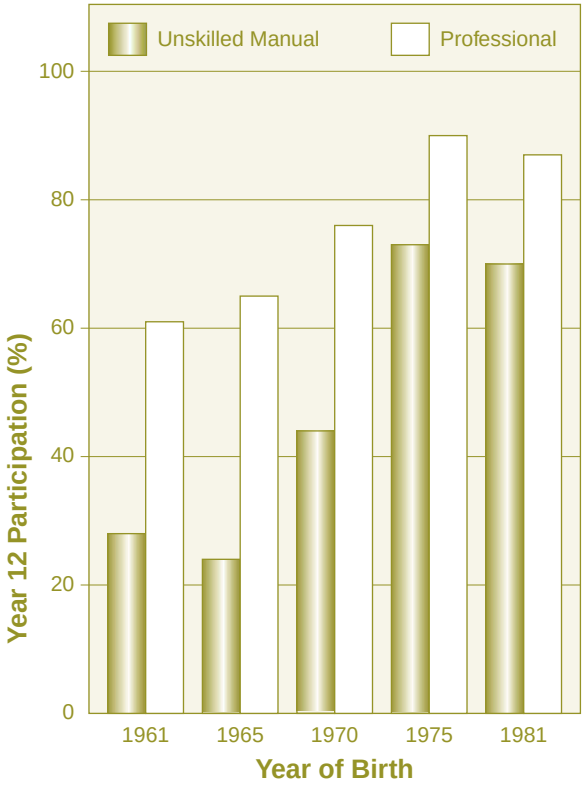
Ethnicity

On average, Year 12 and higher education participation rates of almost all groups of students whose fathers were born in non-English speaking countries were higher than for students whose fathers were born in Australia.

Some groups of students had participation rates substantially higher than that of those whose fathers were born in Australia. For example, while 28 per cent of Year 9 students whose fathers were born in Australia participated in higher education four years later, this was the case for over 40 per cent of students whose fathers were born in Africa and 60 per cent whose fathers were from Asia.

The report noted that it could be argued that the higher participation rates in some groups are because of their higher than average socioeconomic status – the result of policies to encourage more highly educated immigrants and business immigrants – or that they may simply be the result of higher levels of achievement. However, further analysis showed that

Participation in Year 12 by Parents' Occupation



the higher participation rates could not be accounted for by socioeconomic background or achievement in Year 9, suggesting that other factors are at work. These factors may include the strong drive evident in immigrant groups for their children to do well in education, and the high educational aspirations held by some parents and children.

Home location

Students from urban areas are more likely to participate in Year 12 and higher education than students in rural areas. The difference was about 10 percentage points. These differences in participation could not be attributed to differences in literacy and numeracy between rural and urban students.

Gender

The gender gap between boys and girls in both participation in Year 12 and higher education continues to widen, with females outnumbering males in both areas. The gap has increased since the 1980s, and is now around 10 percentage points.

The report noted that the increasing gap in male and female participation in Year 12 and higher education is a matter for concern. The gap cannot be explained by factors such as prior school achievement, which indicates that some boys are now experiencing educational disadvantage.

higher education

Indigenous background

The group that suffers the most educational disadvantage is Australia's Indigenous students. Of the Indigenous students in the sample, 47 per cent participated in Year 12 and 17 per cent took part in higher education. These rates are much lower than those for all students (76 per cent participated in Year 12 and 31 per cent in higher education). Only part of the explanation for the lower participation rates of Indigenous students relates to socioeconomic background and achievement in literacy and numeracy in Year 9. This is a concern because low participation rates in Year 12 tend to be associated with poorer social and economic outcomes among adults.

The report argues that Australia needs to do more to substantially improve the achievement and participation levels of Indigenous students.

Individual school and psychological factors

Students from independent or Catholic schools are more likely to participate in Year 12 than those from government schools, although this difference has declined substantially over the last two decades. In most cases, individual school factors do not appear to affect the likelihood of participating in Year 12. Approximately 7 per cent of schools have Year 12 participation rates below that expected given the state, school type and academic mix of students, and around 5 per cent of schools have higher-than-expected Year 12 participation rates. For these schools, there may be socio-cultural factors that affect the likelihood of their students reaching Year 12.

The study, which focuses on participation in Year 12 in 1998 and in higher education in 1999, is based on over 13 000 Year 9 students. The report forms part of the Longitudinal Surveys of Australian Youth (LSAY) research program, which is jointly managed by ACER and the Commonwealth Department of Education, Training and Youth Affairs (DETYA).

Main findings

Participation in Year 12:

- 76 per cent of the group surveyed participated in Year 12 in 1998;
- females are more likely to participate in Year 12 than males, and the gap between males and females in Year 12 participation has increased since the early 1980s;
- Year 9 students whose parents work in high status occupations are more likely to continue on to Year 12, but the importance of parental occupation has declined since the early 1980s;
- Year 9 students from more educated family backgrounds are more likely to remain at school until Year 12, but these differences have also declined since the early 1980s;
- young people with language backgrounds other than English are more likely to participate in Year 12;
- students living in non-metropolitan areas in Year 9 are less likely to participate in Year 12; and
- Year 12 participation is strongly associated with achievement in literacy and numeracy in Year 9.

Participation in higher education:

- participation in higher education was at 31 per cent in 1999;
- gender differences have grown, with young women increasingly participating in higher education, 9 percentage points more than young men in 1999;
- students with language backgrounds other than English are consistently more likely to participate in higher education;
- young people living in non-metropolitan areas are less likely to participate in higher education but these differences are comparatively small;
- occupational background, school type and achievement have become more weakly associated with participation in higher education over time.

Marks, G., Fleming, N., Long, M. & McMillan, J. (2000). *Patterns of Participation in Year 12 and Higher Education in Australia: Trends and Issues*, LSAY Research Report No. 17, Melbourne: ACER.

The full report is available on the ACER web site (www.acer.edu.au) or copies may be purchased from ACER Press Customer Service telephone (03) 9835 7447; fax (03) 9835 7499; email: sales@acer.edu.au

What qualities should students have?

In recent years there has been increasing concern about the suitability of using the Tertiary Entrance Rank (TER) alone as a method for selecting students into medicine and health science courses.

There are usually far more academically qualified applicants than there are places in medicine and health science courses. Until recently, selection into such courses was often based entirely on academic criteria, with applicants required to have a very high school leaving score based on studies in maths and science.

However, there is now widespread agreement that other qualities are also important in our future doctors and professionals working in the health sciences. The community now demands health professionals who have a demonstrated ability to communicate with and relate to their patients, in addition to having the necessary highly developed levels of skill within their field.

Most universities now use a range of methods to select these students, including interviews and entrance tests. ACER plays a significant role in assisting Australian universities in their selection of appropriate candidates for entry to medical and other health science degrees.

The Undergraduate Medicine and Health Sciences Admission Test (UMAT), first developed by ACER for the University of Newcastle 12 years ago, is now widely used by Australian universities to select undergraduate students for medical, dental and physiotherapy courses. Specifically, it is currently used for admission to undergraduate medicine at Adelaide University, Monash University, the University of Melbourne, the University of Newcastle, the University of Western Australia and University of Tasmania. In addition, it is used for admission to dentistry at Adelaide University, the University of Melbourne and the University of Western Australia; and for admission to physiotherapy at the University of Melbourne.

Another test developed by ACER, the Graduate Australian Medical School Admissions Test (GAMSAT) is used to select graduates for entry into four-year medical degree programs at Flinders University, the University of Melbourne, the University of Queensland, and the University of Sydney.

ACER now has a central role in the UMAT testing program – developing the test and associated information literature, processing registrations, scoring and analysing the test, reporting results to universities and candidates, and taking responsibility for the overall administration of UMAT. ACER also works closely with the consortium of UMAT user universities to further develop the program.

UMAT is not curriculum based and presupposes no particular subjects of study at secondary school level. The test aims to assess a range of general skills and abilities.

"These general skills are not directly revealed through academic testing, but they are considered important to the study and practice of professions in the health sciences," says Ms Cecily Aldous, the UMAT Manager at ACER.

"ACER has developed expertise in testing abilities that are not based around particular curriculum areas," Ms Aldous says.

"Selection procedures should achieve several outcomes, including 'good' doctors, which, while difficult to define precisely, encompasses people who not only have a high level of clinical competence but who also have personal attributes and attitudes pertinent to good medical practice." [1]

[1] Doherty, R.L., Amos, B., Hicks, N., Larkins, R., Morey, S., Sargeant, D. & Smith, R. (1988). *Australian Medical Education and Workforce into the 21st Century.* Canberra: AGPS, p.514.

health science

The test

UMAT is designed to assess general attributes and skills gained through prior experience and learning. In particular, it assesses the acquisition of skills in critical thinking and problem solving, interactions with others and abstract, non-verbal reasoning.

The multiple-choice test takes almost two hours to complete, and is divided into three sections:

Logical reasoning and problem solving

Logical reasoning questions assess the ability to comprehend a passage or piece of information and to draw logical conclusions. Problem solving questions test the ability to reach solutions by identifying relevant facts, evaluating information, pinpointing additional or missing information, and generating and testing plausible hypotheses.

Interaction skills

In this part of the test, short conversational scenarios are presented, some of which will be between a health professional and a patient, while others might focus on more general interaction between individuals. Candidates then choose the response they would be most likely to make from the four given options.

Non-verbal reasoning

The ability to extract particular information from within a large amount of irrelevant data is tested in this section, through questions involving complex patterns and shapes.

"Early research indicates that the new selection procedures, of which UMAT is a part, in combination with curriculum change, are having a positive impact on student outcomes. Some universities comment that students seem to enjoy their course more too! It is something that will be systematically monitored over the coming years," Ms Aldous says.

Approximately 6500 Year 12 and mature age candidates take UMAT each year. The test is held on one day throughout Australia – 15 August in 2001. Registrations close on 29 June.

Photo by Michael Silver / Photonet. Courtesy of The University of Melbourne.

Further information about the test can be found at www.acer.edu.au/unitest/umat or by telephoning (03) 9277 5673. Email: umat@acer.edu.au

UMAT2001

UNDERGRADUATE MEDICINE AND HEALTH SCIENCES ADMISSION TEST

Applying ACER expertise to driving tests

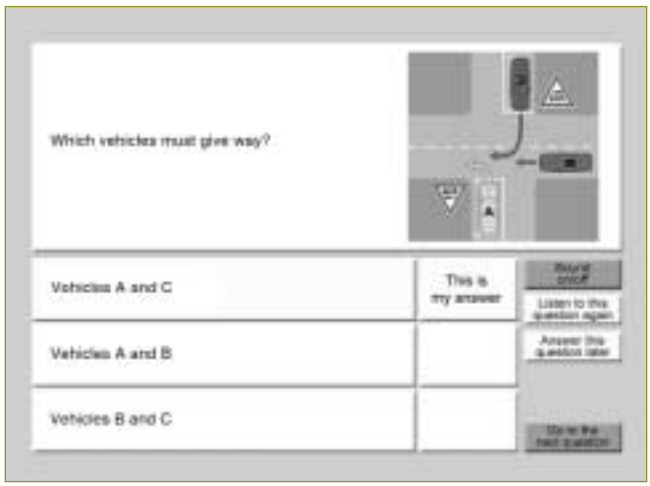
ACER is well known as a national developer of educational and psychological tests, but our test development know-how is now being put to use in some unexpected places.

In a recent example, ACER test developers were called upon to assist in the development of a computer-based car driver Learner Permit Test in Victoria. From September 2001 all candidates for the Victorian Learner Permit test will complete this new test on the Computerised Licence Testing System at a VicRoads Registration and Licensing Office. The computer version of the licence test will draw on a pool of approximately 300 questions.

"Much of our expertise in test development, administration and scoring was directly applicable to the construction of this new test," says Ms Adele Butler, project manager for the driver licence testing project.

ACER wrote the test questions directly from the material in the new VicRoads publication *Road to Solo Driving* which has replaced the *Victorian Traffic Handbook*.

The test questions were trialled over the internet with school students aged 16 to 18 years. ACER staff developed a database that was able to deliver a set of different questions to each student who logged on. As a result it was possible to have a group of students in the same classroom completing the trial test answering different questions.



The new computer-based licence test design developed by ACER has a clear user interface, with optional audio instructions.

ACER has experience in conducting testing programs and supplying tests for many different purposes. Some examples of work in different sectors include:

Schools

- national and state-wide school testing programs in literacy, numeracy, languages other than English, physical education, technology and enterprise
- online testing for schools, in partnership with Centre for Applied Educational Research (CAER), The University of Melbourne (www.iachieve.com.au)
- assessment of attitudes and values in secondary school students (Attitudes and Values Questionnaire)
- scholarship testing for entry to independent or selective schools (including Cooperative Scholarship Testing Program, Australian Cooperative Entry Program, Middle Primary Scholarship Test, Western Australian Talent Program)
- selection testing for accelerated learning programs
- educational tests for purchase by individual schools and classroom teachers (ACER Press)
- language testing for school students (Australian Language Certificates)

Universities

- testing generic skills of university students (Graduate Skills Assessment)
- selection testing for Australian and international university courses in law, medical and health sciences (Graduate Australian Medical School Admissions Test, Undergraduate Medicine and Health Sciences Admission Test, Australian Law Schools Entrance Test)
- university admissions test for students without a recent Year 12 score (Special Tertiary Admissions Test)

Another benefit of using the internet to trial the questions was that a broad range of schools could participate. Every school in Victoria that had students eligible to receive a car learner's permit was invited to participate. This included government, independent, Catholic and TAFE schools throughout Victoria.

"ACER's expertise in test delivery over the internet will be a valuable asset in future computer-based testing programs. Geographic location will no longer be a barrier to participation in such trials. Furthermore, the technology allows for more efficient collation of results," Ms Butler said.

The test has been carefully constructed to ensure that it assesses car driver knowledge, rather than computer skills. VicRoads will have the test translated into 20 languages to cater for people from non-English-speaking backgrounds.

"Computer-based and online testing is likely to expand in coming years as technology improves, and as organisations become more aware of how computer-based testing can benefit them," Ms Butler said.

ACER is also responsible for the design of a self assessment version of the learner permit test that will be available over the internet in 2002. Prospective candidates will be able to give themselves dummy tests made up of actual test questions. This online practice test will provide feedback about their performance, and feedback on specific chapters of the *Road to Solo Driving* book.

Photo courtesy of VicRoads.

To discuss how ACER can assist with your testing requirements, contact Ms Deirdre Jackson, ACER Assessment Services Manager on telephone (03) 9277 5587; email jackson@acer.edu.au

International

- management of a large international testing program in maths, science and reading for school students in 32 countries (OECD Programme for International Student Assessment)
- coordination of Australian component of international tests of student achievement (Third International Mathematics and Science Study, Civics Education Study)
- admission test for international students entering Australian universities (International Student Admissions Test)
- producing student assessment frameworks in developing countries
- standardised literacy and numeracy testing to benchmark international school students in south east Asia with Australian students

Business

- aptitude and psychological tests for personnel selection
- a joint venture between ACER and Hubbub offers employers a fast, effective means of screening candidates through online testing (www.testgrid.com.au)
- testing for entry into some areas of employment, such as emergency service organisations
- assessing candidates for graduate recruitment for government departments and companies, both in Australia and internationally

Research Conference 2001

Understanding Youth Pathways: What does the research tell us?

15–16 October 2001

Hilton on the Park Hotel, Melbourne

This conference, organised by the Australian Council for Educational Research, will bring together key researchers, policy makers and practitioners from schools, tertiary education, employment, youth affairs and social welfare to review and discuss research in a number of critical areas, including:

- The concept of pathways and its applicability in social policy and practice
- Evidence of 'what works' in regard to pathways and the factors that seem to be important for their success
- The priorities for future research

The conference program will include three major plenary sessions, featuring international and Australian speakers and selected respondents. Key Australian research will be presented in concurrent sessions. Small group workshops and panel discussions will maximise interaction amongst participants. Social events include the opening reception and the conference dinner.

Plenary speakers

- Professor David Raffe
  Professor of Sociology of Education
  University of Edinburgh
- Mr Richard Sweet
  Principal Administrator in the Education and Training Division, OECD, Paris
- Professor Jan Carter
  Deakin University
- Captain David Eldridge
  Salvation Army and Chair Youth Pathways Action Plan Taskforce

Important information

Additional information will be available on the ACER website, www.acer.edu.au and in the registration brochure.

To receive a registration brochure, email your full name, organisation and address details to: conference@acer.edu.au

Early bird registrations close on Friday 31 August 2001. The closing date for registrations is Monday 8 October 2001.

Specialist education resources now online

ACER has the most comprehensive educational research library in Australia, and this is now being made more available to the public.

The full catalogue of Cunningham Library is now available through ACER's website. Visitors to the site can conduct their own searches for books, reports and journals held in the library.

Cunningham Library Manager, Ms Margaret Findlay says, "Not only have we opened up access to our catalogue, but we're building on our backup services for our clients."

Individuals and organisations that may need to source documents more than a few times each year would benefit from a subscription to Cunningham Library's member services.

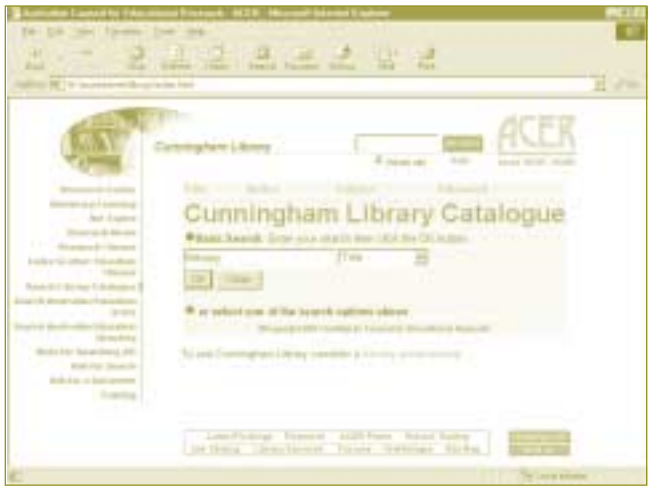
Members can use the library on site, borrow items, request items by phone, fax or email, request literature and information services, and have documents delivered. Members who visit the library premises in Melbourne also have access to a range of databases.

"This new service will provide essential information for researchers of all kinds. Schools and organisations could use the service to support their staff in professional development, or in completing higher degrees," Ms Findlay said.

"Subscribing organisations receive a bonus of around ten per cent on the subscription price, so it really is a good deal for organisations where the staff need access to information about education," Ms Findlay said.

For further information about Cunningham Library Member Services, see the web site www.acer.edu.au/library or call 03 9277 5553 for a brochure.

The online catalogue is also available on the web site www.acer.edu.au/library



Monash University-ACER

Centre for the Economics of Education and Training (CEET)

Measuring and Reporting 'Intellectual Capital'

One of the many challenges associated with *lifelong learning* is finding equitable ways to fund it. Around the world, researchers and policy makers are investigating options for funding lifelong learning that include encouraging both individuals and employers to increase their investments in education and training.

Employer reluctance to invest in human resource development is partly based on a fear that staff may be 'poached' and that their competitors will gain the benefits they have paid for. Another factor is that employers may not have sufficient information to be able to judge how much their investments in people pay off. Many factors contribute to business improvements and distinguishing the particular contribution of training can be difficult.

Fran Ferrier and Phil McKenzie from CEET are working on a project designed to help enterprises better identify and measure the 'intellectual capital' embodied in their employees, and how that is increased by developmental activities. Supported by CEET's funding from the Australian National Training Authority (ANTA), the project is developing a self-evaluation and information kit that enterprises can use to improve their internal decision making on human resource development. A second purpose is to assist enterprises report on the value of their intellectual capital to people outside the organisation, such as potential investors.

Further information on the project is provided in Fran Ferrier's paper *Is investment in intangibles the new face of lifelong learning?*. The paper can be downloaded from the CEET website.

For further details on CEET's research and publications contact:

CEET, Faculty of Education
Monash University
Clayton Victoria 3168
Fax (03) 9905 9184
Phone (03) 9905 9157
Email: ceet@monash.edu.au
Website: www.education.monash.edu.au/centres/CEET

Education review papers

A Policy Maker's Guide to International Achievement Studies

A Policy Maker's Guide to System-wide Assessment Programs

These review papers consider the questions:

- What kinds of assessment data do systems collect?
- For what reasons are these data collected?
- How are these data reported and to whom?
- What role do these data play in improving student learning?
- What impact (positive and negative) have system level initiatives had on school practice?

The Era of Lifelong Learning: Implications for secondary schools

This review paper identifies the key educational concepts that are argued to provide the foundations for lifelong learning.

These papers are now available on the ACER web site (www.acer.edu.au), or print copies may be purchased from ACER Press Customer Service (03 9835 7447; sales@acer.edu.au).

Reminder

The ACER Press catalogue, including prices, is now available on the internet (**www.acerpress.com.au**). Melbourne customers wishing to view the ACER Press product range in person should note that ACER Press is located in a separate building at 347 Camberwell Road, Camberwell. This is less than a kilometre from the ACER head office in Prospect Hill Road, Camberwell. Customer Service staff can also be contacted on telephone (03) 9835 7447 or sales@acer.edu.au

PD Workshops

EDUCATION

Stop Think Do

Lindy Petersen
May 4 Brisbane
May 7 Sydney
August 17 ACER, Melbourne
$132.00

Maths Intervention

Cath Pearn
May 16 Geelong, Victoria
May 17 Hamilton, Victoria
May 31 ACER, Melbourne
June 7 Sydney
June 8 Lismore, NSW
$132.00

Understanding and Diagnosing Reading Difficulties

John Munro
May 18 ACER, Melbourne
August 8 Brisbane
August 18 Townsville
$132.00

Sight Words Made Simple

Marcella Reiter
Twilight workshop
May 17 Mornington, Victoria
May 28 Heidelberg West, Victoria
May 30 Endeavour Hills, Victoria
May 31 Werribee, Victoria
$44.00

Cued Articulation (Saturdays)

Fiona Balfe
May 5 and 12 ACER, Melbourne
$132.00

Cued Vowels (Saturdays)

Fiona Balfe
June 2 and 16 ACER, Melbourne
$121.00

Adolescent Learning

John Munro
August 7 Brisbane
$132.00

Thinking Mathematically

George Booker
October 29 ACER, Melbourne
October 30 ACER, Melbourne
$132.00

Six Thinking Hats – DeBono workshop

Marcella Reiter
June 4 ACER, Melbourne
$155.00

HUMAN RESOURCES

PIN-POINT Personality Instrument Training Course

HR Consultants
June 7–8 ACER, Melbourne
October 11–12 Sydney
$995.00

Occupational Testing Course

HR Consultants
July 16–20 ACER, Melbourne
$1695.00

Test Administration Course

A practical 1 day workshop
HR Consultants
July 24 Sydney
November 20 ACER, Melbourne
$434.50

MBTI

Familiarisation for Psychologists

Jo Fleischer
May 4 ACER, Melbourne
September 5 ACER, Melbourne
$295.00

MBTI and Team Building

Jo Fleischer
May 16–17 ACER, Melbourne
September 6–7 ACER, Melbourne
$495.00

MBTI Qualifying Programme

Peter Geyer
June 4–8 Perth
July 9–13, August 27–31 October 15–19 ACER, Melbourne
August 6–10 Adelaide
September 10–14 Brisbane
November 12–16 Hobart
$1265.00

MBTI Step II

Peter Geyer
July 23–24 ACER, Melbourne
November 29–30 ACER, Melbourne
$539.00

PARENT EDUCATION

Understanding the Emotional World of the Baby

Lorraine Rose
May 4 ACER, Melbourne
$55.00

Sandplay and Symbol Work to Resolve Conflict

Mark Pearson and Helen Wilson
May 7–8 Sydney
September 19–20 ACER, Melbourne
$220.00

Expressive Therapies for Emotional Growth

Mark Pearson and Helen Wilson
June 19–20 ACER, Melbourne
$200.00

Introduction to Sandplay and Symbol Work

Mark Pearson and Helen Wilson
June 21 ACER, Melbourne
$110.00

Pro-Active Counselling

Mark Pearson and Helen Wilson
September 21 ACER, Melbourne
$110.00

Safe Anger Release for Children and Adolescents

Mark Pearson and Helen Wilson
November 7 ACER, Melbourne
$110.00

PSYCHOLOGY

Strong Interest Inventory

Daiva Verbyla
May 10–11 ACER, Melbourne
May 28–29 Sydney
October 29–30 Sydney
November 12–13 ACER, Melbourne
$695.00

Personality Assessment Inventory Workshop

Les Morey
September 26 ACER, Melbourne
September 28 Sydney
$434.00

For workshop information and registration forms, see the ACER web page (www.acer.edu.au) or contact the Professional Development Unit Administration Officer, telephone (03) 9835 7403, fax (03) 9835 7499, email workshops@acer.edu.au

ACER
This newsletter is published three times a year by the Australian Council for Educational Research
19 Prospect Hill Road (Private Bag 55), Camberwell Victoria AUSTRALIA 3124
Ph (03) 9277 5555 Fax (03) 9277 5500 Internet www.acer.edu.au
Enquiries should be directed to the editor, Ms Julia Robinson, at this address, or email robinsonj@acer.edu.au
Print Post Approved PP328727/00028 ISSN 1442-6625 ABN 19 004 398 145