Strong skills in literacy and numeracy are essential for all Australian school children. The Longitudinal Literacy and Numeracy Study (LLANS) is designed to find out more about how Australian children develop these important skills.

ACER will collect information each year about the literacy and numeracy skills of 1000 students who started school this year, from the start of school until they leave primary school to go to secondary school.

Project Director Ms Marion Meiers said, "This study is special because it is a seven-year study. Many studies are designed to find out what students can do at a particular stage of schooling but this study is different because it will find out about the literacy and numeracy development of children as they progress right through primary school."

"Over the seven years of the study, this information will build up a picture of how children develop literacy and numeracy and increase our understanding of the different ways children learn."

LLANS will not provide test results for individual students. The 1000 students will complete common sets of assessment activities once or twice a year to provide information about what a typical sample of Australian children know and can do in literacy and numeracy.

The impact of background influences and the measurement of change over time will be investigated.

The children work with their own teachers in class to complete the specially designed assessment activities. In the first three years of school, students will work in a one-to-one situation with their teachers. As students become older, they will be able to complete the assessment tasks in the course of their normal classroom work.

The first set of literacy common assessment tasks undertaken by students in the first weeks of their first year of school covered: environmental print; book orientation; concepts of print; phonemic awareness and retelling. One of the environmental print tasks, for example, involved looking at a Coco Pops box, asking the child if they could read any of the words on the box, identify letters on the box, or identify letters on the box that were the same.

The baseline numeracy tests covered: over and under; patterns; birthdays; shapes; counting and money.

Ms Meiers said, "We're really lucky to have enthusiastic teachers involved in this study. Without the teachers to sit down with the kids one on one, we couldn't gather this data. The teachers are also finding the on-the-spot assessments valuable."

Teachers will also collect examples of students' normal classroom writing and numeracy work in special portfolios. These portfolios will be kept up to date throughout the study. Some of the teachers involved in the study will have a role as part of an ongoing assessment panel for this portfolio work.

The samples submitted for students' work portfolios show the diversity of ways in which children tackle writing.
Early analysis shows some interesting results, with the students displaying a broad range of abilities.

Ms Meiers said, "In numeracy, most children were able to say their age by writing a numeral or holding up their fingers, and recognise the same characteristic in two objects, such as colour or shape."

"Some children were even able to read the price of an item in a menu or sort objects into three groups according to a criterion, or explain the criterion used to categorise objects into three groups."

"In the literacy test, most children were able to point to the writing on a box, recognise that the words egg and leg rhyme when the teacher read out egg, leg and bag, and write their name correctly."

"Some children were even able to identify the decimal number in a picture, read some words from a story and tell a story from pictures, read the word 'shade', and write a recognisable sentence about a picture."

Ms Meiers said, "One of the ongoing challenges in this study will be keeping track of the 1000 children as some families move around the country over the next seven years. So far, we've been pleased that parents seem keen to keep their children in the study."

Home activities can help students develop literacy and numeracy. ACER will ask parents to complete a survey which asks about the kinds of reading, writing and numeracy work the child does at home, about how much television he or she watches, and about the ways the child uses or does not use computers. These surveys will be completed each year, so it will be possible to track changes in home literacy and numeracy activities.

At the end of each year of the study, the parents of the 1000 children will receive a short booklet describing the kinds of work children all over Australia have been doing in literacy and numeracy. Each year, as the study progresses, these booklets will inform parents about the emerging picture of literacy and numeracy development across the years of primary school. The booklets will not provide information about achievement levels for individual students, but will focus on the big picture of development for Australian children.

Annual progress reports will also be provided to the teachers and principals of the schools involved in the study.

For further information about the project, contact Ms Marion Meiers, Project Director, Longitudinal Literacy and Numeracy Study, on telephone (03) 9277 5709; email: lians@acer.edu.au

ACER Spring 1999
Why do students leave

In recent years, government policies and initiatives have encouraged students to stay at school to complete Year 12. Retention rates rose from around 35 per cent in 1980 to over 70 per cent during the early 1990s. However, some students still leave school before Year 11. What sorts of students leave school early? Why do they choose to do so, and what becomes of them?

ACER's recent report, Early School Leaving in Australia, answers some of these questions.

The study found that boys are more likely than girls to leave school early, and this cannot be fully explained by differences in academic achievement, attitudes to school or aspirations.

Around nine per cent of young people leave school before Year 11 - ten per cent of boys and seven per cent of girls.

The report's main author, Dr Gary Marks, said "Many boys who leave school early obtain apprenticeships, which often provide a career path. However, the decision to leave school early without going onto an apprenticeship or traineeship should be made with caution because the long term job prospects for early school leavers without qualifications are not good."

Among boys, those in regional and rural areas are more likely to leave school early than those in major metropolitan areas. The reason for this difference could not be fully explained by other factors such as school achievement or social background.

The study also found that Aboriginal and Torres Strait Islander students are much more likely to leave school early. Twenty one percent of Aboriginal and Torres Strait Islander students left school before Year 11, with a slightly higher proportion of boys than girls.

The high rate of early school leaving among Aboriginal and Torres Strait Islander students cannot be explained by their socioeconomic background or their level of school achievement. It may be due to pessimism about their ability to remain at school, a lack of encouragement to do so, or a feeling that remaining at school would not "pay off" in terms of further education or better jobs.

"This shows that we should be making more of an effort to increase the school retention rates of Aboriginal and Torres Strait Islander students. It is an important issue because leaving school early increases the chance of becoming unemployed and affects earning capacity," Dr Marks said.

Of social background and school related factors, school achievement had the largest influence on earlier school leaving. Students who perform well at school are far

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Main reasons given for leaving school before Year 11 (per cent)

- I wanted to get a job/apprenticeship
- I was not doing very well at school
- I wanted to do job training that wasn't available at school
- I didn't like school
- Financially, it was hard to stay at school
- Teachers thought I should
- To earn my own money
- The school didn't offer the subjects/courses I wanted to do
- Other reasons

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Research Developments

ACER Spring 1999
school early?

less likely to leave school early. In contrast, students who have low levels of achievement are much more likely to leave school early.

The study also found that students of non-English speaking backgrounds are less likely to leave school early, and positive attitudes to school decreased the likelihood of early school leaving.

More than 50 per cent of the students who left school early say the main reason they left was to find a job or apprenticeship. A further 13 per cent said they left because they did not like school. Only a small proportion indicated that financial factors were the main reason they left school.

Over 70 per cent of early school leavers were working full time, a further 8 per cent were working part time and 11 per cent were looking for work. However, there are some worrying signs in the labour market experiences of early school leavers. The proportion of female school leavers working in full-time jobs is much lower than that for males. Substantial proportions of both sexes are working in the types of jobs where there are few opportunities for training or career advancement.

"The long term outlook for early school leavers without qualifications generally isn't good, but in this study we were pleased to find that most of the early school leavers were doing reasonably well in the short term," Dr Marks said.

The study was based on over 10 000 young people who were contacted annually for three years since they were in Year 9 in 1995. It forms part of the Longitudinal Surveys of Australian Youth research program, which is conducted by ACER and supported by the Commonwealth Department of Education, Training and Youth Affairs.

The full report is available from ACER Customer Service (A111LSA; $20, plus p&h); telephone (03) 9277 5656; fax (03) 9277 5678; email: sales@acer.edu.au


**Occupations of early school leavers, 1997 (per cent)**

<table>
<thead>
<tr>
<th>Professionals</th>
<th>Para-professionals</th>
<th>Tradespersons</th>
<th>Clerks</th>
<th>Salespersons and Personal Service Workers</th>
<th>Plant and Machine Operators, and Drivers</th>
<th>Labourers and Related Workers</th>
<th>Unknown</th>
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<tbody>
<tr>
<td>Male</td>
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ACER Spring 1999

Research Developments
How do our schools prepare

The relationship between schools, industry and the preparation of young people for work has been of rising interest during the 1990s. Many western societies, including Australia, have seen a need to redress the balance of effort in education systems between a university orientation and workplace oriented, applied learning.

ACER Senior Research Fellow, Mr Jeff Malley said “Vocational education became popular in schools during the 1990s because it provided another means to meet demands for increasing school retention rates.”

“Learning through integrating theory with practice in real situations seems to fit the learning style of many young people. Vocational programs often involve partnerships of schools with enterprises in which students learn and apply skills in real situations as part of the curriculum.”

ACER recently researched detailed case studies of best-practice school-industry programs in 16 schools. The study aimed to present those running school-industry programs with a variety of ideas and examples, drawn from the experience of others as to what makes these programs work.

The case studies revealed that employers tended to expect schools to look after the administrative aspects of the program. This included providing employer briefing notes, log books, skills lists, student selection, pre-placement training, regular employer contacts, remedial action and counselling.

The more robust programs were those where the Principal of the school was active in supporting school-industry programs. An optimum level of support from a Principal was where they actively promoted the value of workplace learning to other teachers within the school, as well as to employers, parents and other Principals; modified timetables to accommodate it; provided dedicated staffing units to support it; and became involved in seeking further resources.

“Timetables which build in work placement time without a penalty class catch up are probably the ultimate sign of a school’s commitment to supporting structured workplace learning,” Mr Malley said.

Resources

Resourcing for school-industry programs was a problem in every school visited. Schools responded to this challenge in many ways, but often by working with other schools in administration and by pooling enrolments.

There was an inconsistency in the way different types of school-industry programs were funded. In some cases, employers were hosting group training school based apprentices (which are funded) and VET in School students (which are largely unfunded) doing nearly identical courses.

Within government schools the loss of experienced vocational teachers and their replacement by inexperienced non-vocational teachers was identified as a major threat to program continuity. It also became apparent from the case studies that there is a shortage of teachers with the skills to initiate and develop effective school-industry programs.

“State education authorities and teacher training institutions will need to pay attention to appropriate training and professional development strategies if vocational programs with school-industry links are to be sustained,” Mr Malley said.

Equity

Access and equity are important in relation to school-industry programs.

“Whether the vocational programs are accessible to all those who wish to participate in them is a concern. Where work placements were limited, sometimes only the ‘best’ or ‘prepared’ students were sent to employers,” Mr Malley said.

What does a school-industry program involve?

Vocational programs involving industry partnerships can include:
• wage based New Apprenticeships;
• standard vocational courses approved by central authorities for end of school certification and university entrance score contribution; and
• locally designed programs to assist youth to transfer to ‘good’ jobs, usually without completing the full 12 years of schooling.

New Apprenticeships allow students to mix school attendance and attendance at work under a formal contract of training with an employer. In effect, part time school and a part time apprenticeship can be combined to result in a dual certificate outcome of a nationally recognised training qualification and a school completion certificate.
Two reasons were used to justify this. One was that the reputation of the school with employers is determined by the quality of student sent to them, and the other was the concern that an employer might withdraw from participating in the program if they received a difficult student.

**Pathways**

The departure of students prior to their completion of school-industry programs was common in these case studies. In most instances students left the program to take up a job with structured training with an employer who had participated in the school program.

Mr Malley said “Privately many teachers indicated that this was the best outcome possible for those young people. Publicly there was concern that indicators such as apparent retention rates were generating pressures that wouldn’t support this type of outcome.”

“A number of schools asked why we couldn’t design an indicator system which measured and valued the movement of students from school into these jobs.”

The case studies also revealed some schools are increasingly involved in post school job placement activities and the development of regionally coordinated models of community learning and servicing of youth needs.

“Many of the schools in this report regularly receive requests from employers for students to fill full time jobs. A smaller group of schools are more active in placing students in jobs through Jobs Pathways Programs, and other formal and informal networks,” Mr Malley said.

One overwhelming theme from the case studies was that there are a variety of ways to run a school-industry program, and that the programs are subject to change.

“The thing that stands out about successful programs is their capacity to respond and manage change, and the strong and visionary leadership behind them,” Mr Malley said.

Case Studies of Australian School-Industry Programs, Volume 1 will soon be published by ASTF. The detailed case studies will be available on the ASTF web site at www.astf.com.au

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**Tips for successful school-industry programs**

- Consider the options for different ways of running a school-industry program.
- Share with other schools in your area.
- Investigate opportunities with local specialist industries.
- Make sure the program is led by a strong, visionary leader.
- Talk with other job brokers and facilitators.
- Get a “key” local industry CEO on to your management committee.
- Think outside the square of traditional schooling when dealing with employers, particularly in areas such as timetabling, on the job support for students and competency assessment.
Exploring international

Australian education systems aim to be among the best in the world. But what do we know about world's best practice in education? ACER is engaged in a number of studies to find the answer.

The creation of world class education systems requires answers to difficult questions: What are the best ways to organise schools? How does class size affect learning outcomes? What is the relationship between teacher qualifications and student achievement? What impact does school starting age have on subsequent learning? Does the length of the school year matter?

Many of these important policy questions cannot be answered by studying experience or by conducting experiments within a single education system. However, across the world, considerable variation in the ways in which education and training are organised and delivered provides researchers with a natural 'laboratory' for investigating important influences on student learning.

ACER is leading Australia's participation in a number of international studies designed to compare the educational achievements of students in different countries and to provide insights into factors impacting on educational outcomes. Together, this set of studies is providing researchers and policy makers around the world with a better understanding of international best practices in education.

Australia's participation in the Third International Mathematics and Science Study - Repeat (TIMSS-R) will provide Australian education systems with information about growth in mathematics and science achievement between Year 4 and Year 8. What progress did the TIMSS cohort of students make between 1995 and 1998? How did their mathematics and science progress compare with rates of growth in other countries? What factors appear to be associated with increased rates of learning?

In a related study, ACER is managing Australian participation in the TIMSS-Video study (see page 11), a cross-national study that will videotape and analyse teaching practices in Year 8 mathematics and science classrooms in seven countries.

In the Schools Around the World project, ACER is working with researchers from eight other countries to compare samples of student classroom work in science initially and then mathematics in Years 4, 8 and 10. Teachers from a sample of secondary and feeder primary schools in each country will outline their expectations of student work, describe how they communicate these expectations to students, and show how they assess classroom work. From March next year teachers from Australia will communicate with those in the other countries via email to discuss common goals and expectations.

Another study, the Programme for International Student Assessment (PISA), will commence data collection in 2000. ACER, with the support of several other international agencies, is managing this project for the
Countries participating in TIMSS-Repeat

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<td>United States</td>
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OECD. PISA will assess reading literacy, mathematics literacy and science literacy levels among 15-year-olds in more than 30 countries. Tests will be administered to national samples of students every three years, and information will be collected about a range of important demographic, social, economic and educational variables.

ACER, in conjunction with the University of Canberra, is also conducting the IEA Civics Education Study which aims to address policy questions including the status of civic education and the role of schools and teachers, as well as to assess cross-national differences in student outcomes. It is a study of civic knowledge and skills, concepts, attitudes and actions of 14-year-olds in 31 countries.

The study deals with issues such as: democracy, national identity and relations between countries, social cohesion/diversity, economics, mass media and local problems like the environment. The international report will be published early in 2001.

Countries outperforming Australia in mathematics

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<td>Czech Republic</td>
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<td>Japan</td>
<td>Netherlands</td>
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Through this set of studies, international researchers are developing a better understanding of the ways in which education policies and practices differ from one country to another. The systematic collection of student achievement data in different countries is providing a basis for evaluating the effectiveness of different educational arrangements and for identifying factors underlying world's best practice.
Funding renewed for ACER’s vocational education and training research

The Monash University-ACER Centre for the Economics of Education and Training (CEET) has won a second three-year research contract from the Australian National Training Authority (ANTA). CEET has received this support for its research on the economics of vocational education and training (VET). CEET is one of only four groups selected to receive funding from ANTA under its key VET centres program.

ANTA chief executive officer Moira Scollay said “These centres will help broaden and inform the critical debate about the future of vocational education and training and lifelong learning in Australia. Their role will be to lead us in thinking outside the square and seeking new and innovative directions in successful training delivery.”

CEET was established in 1992 to conduct research on the economics of education and training in Australia. CEET aims to improve links between researchers, policy makers and practitioners. Since 1998 CEET has adopted the theme Rapid Economic Change and Lifelong Learning to guide its research program. Dr Phil McKenzie from ACER is Director of Programs at CEET.

CEET’s research focuses on the social and economic outcomes of education and training. The main areas currently identified for study are:

- the changing demands of the economy and society for VET
- the relationship of that demand to the supply of VET
- efficiency and equity in the provision and distribution of VET
- markets and public planning in the funding and provision of VET.

CEET maintains an active program of publications, seminars and workshops. Further information about CEET activities can be found on the CEET web site (http://www.education.monash.edu.au/centres/ceet).

VET and the voluntary sector: conceptualising the issues

SEMINAR

What are the training needs of people working in the voluntary sector? How do volunteers in the arts, social services, health, education, sport and elsewhere currently get their training? How could their access to training opportunities be improved? What would be the delivery and funding implications? To what degree is the voluntary sector a pathway to paid employment?

This CEET seminar will address these questions and will encourage interaction between members of expert panels and seminar participants.

9.15 am - 4.30 pm
Friday 12 November 1999
Seminar Room 1, Monash Conference Centre
Level 7, 30 Collins Street, Melbourne
$30 Prebooking essential on (03) 9906 9157

New chair for ACER Council

Professor Jillian Maling AM will become Chair of ACER Council from mid-November 1999. Professor Maling replaces Professor Peter Karmel, who retires after holding the position for twenty years.

Prior to her present work as an education consultant based in Adelaide, Professor Maling was Deputy Vice-Chancellor and Chief Executive Officer of the University of Western Sydney (Nepean) from 1989-95, and Principal of the Nepean College of Advanced Education from 1986-88. Before moving to New South Wales, Professor Maling was Acting Principal (1984-86) and Deputy Principal (1982-84) of the South Australian College of Advanced Education. After holding lecturing positions, first in Western Australia and then in South Australia in the late 1970s, she was Dean of the Faculty of Education at the Adelaide College of Arts and Education from 1980-81. Professor Maling is a former President of the Australian College of Education, and has been a member of the ACER Council since 1989.

www.acer.edu.au

Find out about the latest research, browse the catalogues and order ACER products, sit a sample test, and much more.

Visit ACER’s new website from November.
A unique and important mathematics and science study is being carried out in up to one hundred randomly selected secondary schools throughout Australia. Each participating school will have one mathematics and one science lesson at the Year 8 level videotaped. The study will yield valuable insights into how mathematics and science are being taught at the Year 8 level in Australian classrooms.

The study is a follow up of the successful Third International Mathematics and Science Study (TIMSS) and the small-scale video study of mathematics teaching associated with TIMSS. This study is called the Third International Mathematics and Science Study - Repeat Video Study (TIMSS-R Video Study). ACER is conducting the Australian component of the study. The other countries participating are: the USA, the Czech Republic, The Netherlands, Japan, Hong Kong and Switzerland.

The study aims to:
• investigate current mathematics and science teaching practices in several countries;
• allow comparisons of teaching practices in different countries;
• discover new ideas about teaching maths and science;
• develop new research methods for studying teaching; and
• stimulate and focus discussion of teaching practices among educators, policy makers and the public.

Through separately filmed classes that are not part of the main study, but for which identical methods will be used, the study will also create a digital library of images of teaching.

Data for the Australian study will be collected by
• videotaping one mathematics and one science lesson at the Year 8 level per school in a national random sample of 100 Australian schools;
• teacher and student questionnaires; and
• an offer to schools for students in the videotaped classes to complete the International Benchmark Tests in Mathematics or Science, and to receive the comprehensive reports from this program free of charge.

Videotaping has begun in Australian schools, and will continue until the middle of next year. It is hoped that some preliminary results will be released in 2001.

All education sectors are considering this study a high priority because of the benefits it will deliver to teachers, educators, professional development coordinators and teacher trainers.

The Australian study is funded by the Department of Education, Training and Youth Affairs, the Australian State and Territory Education Departments, ACER and the National Center for Education Statistics, US Department of Education.

Detailed further information is available on the internet at www.lessonlab.com/timss-r. Alternatively, contact Dr Jan Lokan, Acting Associate Director (Measurement) on telephone (03) 9277 5505 or email: lokan@acer.edu.au

Learning LOTE with Language Certificates

Would you like learning another language to be a positive experience for your students? The National Australia Bank Language Certificates can give all students an experience of success, and also offer more able students some challenge.

Under the supervision of a teacher, students undertake reading and listening tasks. Students respond to realistic texts and situations, and answer using a multiple choice format. Their work is assessed at ACER, and students receive a certificate describing the skills they demonstrated in reading and listening.

The certificates are designed to encourage the learning of Languages Other Than English (LOTE) in schools. The project, which is administered by ACER, is an initiative of the Australian Multicultural Foundation with the National Australia Bank as its major sponsor.

In 1999 the program included:
• Japanese First Certificate (upper Primary and lower Secondary school - Listening only), Beginners’ and Intermediate
• Chinese Beginners’

ACER Spring 1999

You saw your teacher on the street in the evening. You say:
A  おはよう。
B  こんばんは。
C  さようなら。
D  こんにちは。

You were able to make this triangle right?
**EDUCATION**

**Emotional Resilience Workshops**
Developing Curriculum Activities for Understanding and Managing Feelings
ACER 8 November
Presenter: Jenny Rickard
Cost: $100

Developing Curriculum Activities for Stress Management and Relaxation Skills
ACER 10 November
Presenter: Jenny Rickard
Cost: $100

**Philosophy for Children and Adolescents Workshops**
Philosophy, Thinking & Dialogue in and across the Curriculum
ACER 26 October
Presenter: Laurence Splitter
Cost: $100

Teaching Ethics and Values in the Middle School Years
ACER 26 October
Presenter: Laurence Splitter
Cost: $100

Improving Students' Thinking and Reasoning in Mathematics
ACER 11 November
Presenter: Laurence Splitter
Cost: $100

**MBTI**

**MBTI Qualifying Program**
ACER 8-12 November
Presenter: Peter Geyer
Cost: $1075
Contact Peter Geyer on (03) 5562 3033 for further details.

**Type for Counsellors**
(MBTI for Psychologists)
ACER 22-23 November
Presenter: Peter Geyer
Cost: $350

**MBTI for Organisations**
Using the work of Sandra Hirsch
ACER 29-30 November
Presenter: Peter Geyer
Cost: $300

**MBTI Step II Program**
ACER Nov 16-17
Presenter: Peter Geyer
Cost: $295

**MBTI Form M**
(half-day workshop)
ACER Dec 1
Presenter: Peter Geyer
Cost: $75

**PARENT EDUCATION**

**Safe Anger Release for Children and Adolescents**
ACER November 5
Presenter: Mark Pearson
Cost: $95

**HUMAN RESOURCES**

**PIN-POINT Training**
A 3-day program providing the skills to effectively incorporate personality assessment into recruitment and selection processes.
Sydney November 17-19
Presenters: Melissa McCollough Marian Power
Cost: $1495

**Test Administration Course**
A practical 1-day program providing the essential skills and understanding for professional test administration.
Melbourne October 29
November 26
Presenters: Melissa McCollough Marian Power
Cost: $695

**Assessment Centre Exercises**
A 2-day program covering everything required to use the ACE materials effectively and professionally, in a well-run assessment centre.
Melbourne November 11-12
Presenters: Melissa McCollough Marian Power
Cost: $395

**PSYCHOLOGY**

The aim of these workshops is to provide hands-on experience. Historical background, theoretical framework and current research will be covered. These workshops are aimed at the practising professional.

**Assessment Instruments for Trauma**
ACER 8 November
5.00-7.30 pm
Presenter: Daiva Verbyla
Cost: $60

**Assessment Instruments for Adult and Childhood Depression**
ACER 15 November
5.00-7.30 pm
Presenter: Daiva Verbyla
Cost: $60

For further information about the workshops listed, contact the ACER Workshop Coordinator, Ms Sandra Murphy, on Phone: (03) 9277 5533 Fax: (03) 9277 5678 Email: workshops@acer.edu.au

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Any enquiries should be directed to the editor, Ms Julia Robinson, at this address, or email robinson@acer.edu.au

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