Research
developments

NEWSLETTER OF THE AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH

- Advancing literacy learning
- Young Australians delay transition to adulthood
- Professional standards for teachers of science
- Making PISA results more accessible

ACER

Advancing literacy learning

Approaches to literacy teaching and learning in Year 1 can have effects that last at least until Year 3. Children exposed to particular kinds of literacy teaching not only make greater progress in Year 1, but also display higher levels of literacy achievement by the end of Year 3.

These are among the findings of recent research into Literacy Advance, a reform strategy of literacy teaching and learning introduced in 1997 by the Catholic Education Commission of Victoria. Literacy Advance provided Victorian Catholic primary schools with the opportunity to choose from a range of approaches to literacy including the Children's Literacy Success Strategy (CLaSS) and an individual intervention program called Reading Recovery. Schools were required to incorporate several elements in their literacy program. Key elements included early intervention programs for students experiencing difficulties in the area of literacy, the appointment of a full or part-time literacy coordinator from within the school, the assessment and monitoring of all Year 1 students and the provision of home-school links or partnerships.

The Literacy Advance Research Project (LARP) evaluated the implementation of Literacy Advance and explored the influence of a range of school, classroom and student background variables on literacy development in the early years of school.

Implementation of Literacy Advance

The implementation of any systemic reform takes time. Progressive implementation of Literacy Advance was seen in:

- Changes in the literacy approach adopted by schools – an increase in the uptake of the Children's Literacy Success Strategy (ClaSS);

- Literacy coordination – an increase in the percentage of schools providing Reading Recovery for students who need additional assistance;

- Adherence to the 'literacy block' structure – although many schools implemented the two-hour literacy block in the first year of Literacy Advance, there was evidence that it became more rigorously implemented as an uninterrupted time. The vast majority of classrooms provided a two-hour literacy block that was held each morning and was virtually interruption-free.

LARP involved more than 300 teachers and 4000 students for each of two cohorts in 150 schools. Children in the first cohort were followed from the beginning of Year 1 until they participated in the state-wide assessment program late in Year 3. LARP also followed the literacy learning of a second cohort of children who commenced Year 1 in 2000.

Research methods employed during the project included surveys of schools and teachers, case study visits to selected schools and the gathering of data about classroom practices using literacy logs completed by teachers, as well as portfolios of student work.

The study revealed marked changes in schools' approaches to literacy teaching in the past few years. The percentage of schools adopting the Children's Literacy Success Strategy (ClaSS) increased from 11 to 60 per cent; schools with a literacy coordinator for two or more days a week increased from 18 to 50 per cent; and schools providing Reading Recovery for children in need of assistance increased from 50 to 80 per cent. The vast majority of classrooms provided a two-hour literacy block each morning.

According to the LARP report, the tracking of Literacy Advance over three years reveals a steady take up of its essential elements. Some elements of Literacy Advance were more readily adopted than others. Although the ClaSS approach embodied the key elements of Literacy Advance more clearly

Growth in word recognition
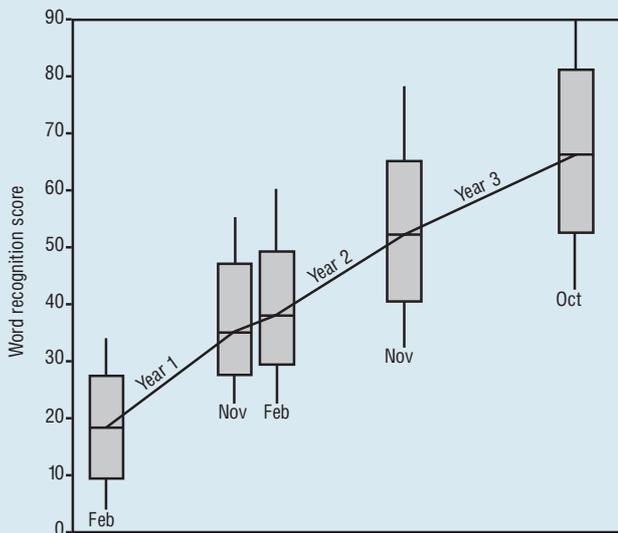
than other approaches, there was convergence over time. Three years after Literacy Advance began, there was measurable improvement in students' reading proficiencies at the beginning of Year 1 and the benefits of approaches to teaching that were more explicitly embodied in the principles of Literacy Advance had endured through to Year 3.

The LARP project provides valuable insights into the nature of literacy development. As students progress from Year 1 to Year 3, the gap between the most and least able readers widens and the rate of progress slows (see graph). The study also provides useful insights into factors influencing literacy development. The amount of uninterrupted time for literacy learning was found to be positively related to children's progress, as was their engagement in reading. Children involved in ClaSS displayed greater progress than other children, and children participating in Reading Recovery made greater gains than their peers.

There also was evidence for the effectiveness of increased attention to literacy learning in the preparatory year of school, with children in 2000 commencing Year 1 about a quarter of a year in advance of children who commenced Year 1 in 1998.

The Literacy Advance Research Project was undertaken collaboratively by the Catholic Education Office Melbourne (on behalf of the Catholic Education Commission of Victoria), ACER and the Centre for Applied Educational Research at the University of Melbourne with funding from the Commonwealth government. Further information is available in the report *Three Years On: A Study of Literacy Advance and its Effects Over Three Years* by ACER researchers Dr John Ainley, Ms Marianne Fleming and Ms Margaret McGregor.

The report is available in PDF format on the Commonwealth Department of Education Science and Training website www.dest.gov.au

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Young Australians delay transition to

Today's young Australians are delaying their transition from education to full-time employment, from living at home to owning their own home, and from 'singledom' to marriage. These are among the findings of the recent ACER report *Becoming an Adult: Leaving Home, Relationships and Home Ownership Among Australian Youth*.

The report finds that young people are remaining in the parental home longer, a change that is more evident among young women than young men; they are choosing less formal de facto relationships more frequently and delaying their entry to marriage; are spending more time in rental accommodation; and are entering home ownership at decreasing rates.

The report focuses on three aspects of adulthood: moving out of home, establishing a relationship and buying a house. The report documents the incidence of these events over time and analyses their relationship with social background, demographic and labour market factors. The study uses data from the four Youth in Transition cohorts born in 1961, 1965, 1970 and 1975.

According to ACER Deputy Director Dr John Ainley, the report reveals that young people (under 25) are now making the transition to independent living at much older ages than in previous cohorts and there is some indication that a growing number of young people may not achieve the traditional markers of adulthood.

'With a growing number of young people opting to delay marriage and the purchase of a home, this research indicates the possible existence of new markers of adulthood such as establishing a serious *de facto* relationship or entering rental accommodation.'

The report found that location and cultural background were two of the strongest influences on leaving home. Young people living in non-metropolitan areas were up to twice as likely to leave home as their metropolitan peers. Those whose parents were from a non-English speaking country were half as likely to leave as those whose parents were born in Australia.

Young people who hold a university qualification were less likely to marry in the surveyed period (ages 19–25).

The research also found a very strong relationship between marriage and home ownership. Young people who were married were two to four times more likely to purchase a home than their unmarried peers.

Dr Ainley said that the report's findings had a number of potential policy implications.

'We have found previously that the attainment of markers of adulthood has some bearing on the levels of wellbeing of young Australians. It is possible, therefore, that policies that delay the attainment of independence can also affect the life satisfaction and wellbeing of young Australians.'

Becoming an Adult: Leaving Home, Relationships and Home Ownership Among Australian Youth, by ACER researchers Ms Kylie Hillman and Dr Gary Marks, is Research Report Number 28 in the Longitudinal Surveys of Australian Youth research program, jointly managed by ACER and the Commonwealth Department of Education, Science and Training.

The full report is available on the ACER website (www.acer.edu.au) in PDF format. Print copies of the report may also be purchased from ACER Press
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The report reveals that young people (under 25) are now making the transition to independent living at much older ages.

adulthood

Moving out of the family home

- Young people (under 25) are now making the transition to independent living at much older ages that in previous cohorts.

- Non-metropolitan people were up to twice as likely to leave home as their metropolitan peers.

- Those whose parents were from a non-English speaking country were half as likely to leave as those whose parents were born in Australia.

Marriage and relationships

- Smaller proportions of the younger cohorts were married at each age over 21 while larger proportions were living in *de facto* partnerships.

- Overall, the level of serious relationships (*de facto* or marriages) was quite similar for all cohorts by age 25.

- Young people from a non-metropolitan area were more likely than those from metropolitan areas to get married.

- Educational attainment had a stronger effect on the likelihood of marriage for females than for males, while the influence of location appeared to be stronger for males than for females.

- Holding a university qualification appeared to have a relatively consistently negative effect on the likelihood of a young person marrying in the surveyed period (ages 19–25).

- The positive influence of employment on marriage decreased for males over time, while the negative impact of study on the likelihood of marriage for females increased across the cohorts.

Home ownership

- Young people, particularly those in the two youngest cohorts, were spending longer periods of time in rental properties.

- Young people who were married were two to four times more likely to purchase a home than their unmarried peers.

- Those who were employed were up to four times more likely to purchase a home than those who were not employed.

Professional standards

High teaching standards are vital for quality education. But what makes a good teacher, and how can that be measured?

Teaching standards articulate core educational values and describe what teachers need to know and be able to do to put these values into practice.

ACER's Head of Teaching and Learning Division, Dr Lawrence Ingvarson, said 'What teachers know and do is the most important factor affecting student learning outcomes. Nothing matters more to the quality of education in our schools than the knowledge, skill and commitment of teachers.'

'We need strategies to attract able graduates, prepare them well, retain them in teaching and promote their continuing professional development toward high professional standards. Central to the success of such strategies are improved working conditions and career paths that place greater value on teachers' work and provide greater incentives for all teachers to develop toward high levels of effectiveness.'

In any profession, standards are important for registration, accreditation and certification. 'Professional standards, by definition, are profession wide, and registration and certification, as endorsements that practitioners have attained those standards, are portable qualifications. This could be useful for teachers as they move between sectors and employers,' Dr Ingvarson said.

Relating professional standards to practice

ACER has developed a professional development program, *Relating professional standards to practice*, designed to assist groups of teachers of science to use teaching standards to reflect on their practice and help them to analyse evidence from students' work and videotapes of classroom interactions.

'For the teachers who participated in the program, and for the facilitators too, the experience has been enriching and rewarding. They have a strong conviction, supported by evidence, that their teaching practice has already changed for the better,' Dr Ingvarson said.

Six schools are participating in a trial of the professional development program, which will cover six sessions over one year. The teachers will evaluate the impact of this portfolio preparation on their professional learning.

'The next step – the certification of science teachers – will be available in the next few years.'

Assessment of teacher performance, using the evidence provided by the portfolios, will provide the basis for a voluntary system of professional certification.

Professional certification

'We need tools that will build strong links between standards and action; otherwise standards will remain on the shelf. Assessment is an essential tool in building these links,' Dr Ingvarson said. 'The hard question is how we move from where we are to a profession that actually has some real responsibilities, such as certification, with which it is entrusted.'

Initially, not all education authorities will want to become involved with professional certification or accreditation, according to Dr Ingvarson. 'Some states and territories appear ready to move in this direction, others have their own schemes. In fact it may be wiser to start with just one or two states and territories and build out from there.

'It is increasingly common to hear senior government officials say that the development of teaching standards is not their business; rather it is something they are looking for the profession to do. There are now many more signs that this is just what the profession is willing and able to do.'

for teachers of science

Standards for teachers of science

The Australian Science Teachers Association (ASTA) launched the National Professional Standards for Highly Accomplished Teachers of Science in March 2002.

The project was conducted by Monash University as an Australian Research Council Strategic Partnerships with Industry – Research and Training project in collaboration with ASTA. ACER's Dr Lawrence Ingvarson was the project's Chief Investigator. These standards and methods for assessing performance of science teachers provide a basis for:

- improving the effectiveness of professional development;

- improving career paths and pay systems for teachers who attain the standards;

- incentives for teachers to engage in long term professional learning; and

- strengthening the contribution the profession makes to leadership in teaching, accountability and quality assurance.

Once the standards were established, tasks for assessing the performance of highly accomplished teachers of science for professional certification were developed. Groups of teachers in four states were involved in trialing and evaluating the potential of five different portfolio entries as a way in which teachers can present evidence about their practice.

The structured portfolios cover core tasks that teachers perform in the normal course of their work. The portfolio entries collectively provide reliable evidence through multiple sources of a teacher's performance that can be measured against the standards. The portfolio entries are based on analysing student work samples, videotapes of teaching and accomplishments outside the classroom. Integral to all portfolios is the written commentary in which teachers critically analyse their practice and reflect on implications for future teaching and learning of their students.

Further information

Australian Science Teachers Association. (2002). *National professional standards for highly accomplished teachers of science.* ASTA National Science Standards Committee, Canberra.

Ingvarson, L. (2002). *Development of a National Standards Framework for the Teaching Profession,* An issues paper prepared for the MCEETYA Taskforce on Teacher Quality and Educational Leadership, ACER: Melbourne.

Ingvarson, L. (2002). *Strengthening the profession? A comparison of recent reforms in the UK and the USA,* ACER: Melbourne.

'The chance to see myself teach and reflect upon my practice, although daunting, enabled me to look closely at the things I did well as well as look at the things I could improve on.'

Teacher who participated in the portfolios trial.

Making PISA results more accessible

All educators can take advantage of the information collected in an international study of reading, mathematical and scientific literacy.

The Programme for International Student Assessment (PISA) compared the reading, mathematical and scientific literacy performance of Australian 15-year-olds with the performance of 15-year-olds in 31 other countries, including USA, Canada, Japan, Korea and many European nations including the UK and Russia.

265 000 students from 32 countries took part in the first PISA survey in 2000 in key areas thought to be essential for full participation in adult life. In Australia, 6200 students from 231 government, Catholic and independent schools in all states and territories took part.

Students answered a two-hour test and a background questionnaire about themselves, and principals answered a questionnaire about their schools. The student questionnaire collected background information on students and their learning environment, learning strategies, and computer familiarity.

PISA was implemented for the OECD by a consortium of research organisations led by ACER in Melbourne. The Australian component of PISA was also implemented by ACER and was jointly funded by the Commonwealth, state and territory governments.

The results of the PISA 2000 study were released in December 2001, and there has been considerable international interest in the data from all sectors within the participating countries. The OECD engaged ACER to design and implement an innovative online data dissemination strategy.

The data are available on the internet, in formats tailored to different potential users of the data.

Quick glance at the PISA data

For teachers, principals, researchers and students wanting to explore performance against background variables

The interactive data selection was developed to allow users to quickly determine literacy levels in reading, mathematics and science against one background variable from any country. Data can easily be accessed to investigate background variables such as gender, school location and a number of other student and school variables on the literacy levels in reading, mathematics and science. Data from the interactive website can be readily downloaded onto a local PC to allow for further manipulation and for presentation using desktop packages such MS Excel.

Copies of the context questionnaires used to collect the background data can be downloaded from the site. When downloaded, these can be used to explore the data. A set of tables are displayed on the screen when questions and countries of interest are selected. The tables will show the percentage in each response category and the mean achievement in each of the three PISA assessment domains (reading, mathematical and scientific literacy).

A considered glance

For those wishing to explore relationships between variables

More complex analyses, with up to four variables in a range of countries, can also be requested. Results are specific to student performance in reading, mathematical or scientific literacy (only one selection possible per request). The ACER server does this calculation and when the calculation is complete, the results are emailed back to the user. This service is free of charge.

The full dataset

For professional statisticians and psychometricians

The PISA dataset contains many stories and will remain a major resource for social scientists in years to come. To enable professionals to fully explore the data using cutting edge methodologies, the PISA data in its complete form is also available on the website.

Statisticians and professional researchers can download the PISA 2000 dataset with the full set of responses from individual students and school principals. The files available on this page include the questionnaires, the data files, the codebooks as well as SAS and SPSS control files in order to process the data. Researchers would require the appropriate technology and skills to analyse the data in its full potential.
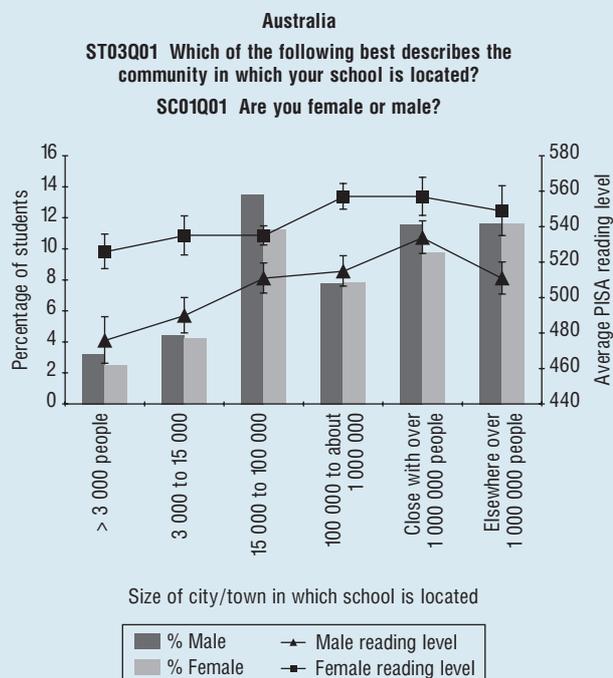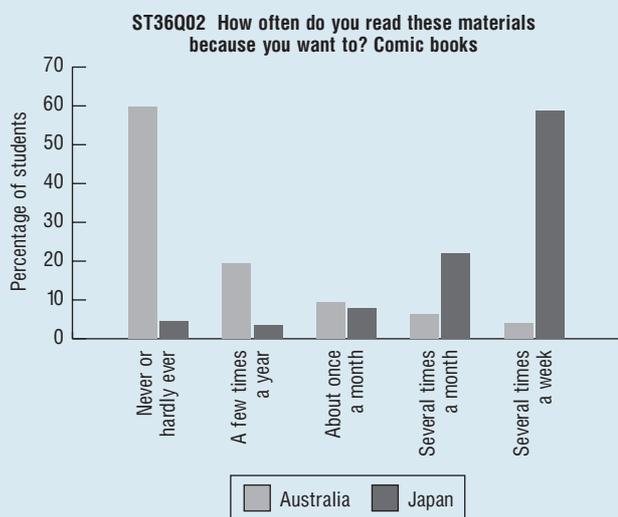
PISA DATA service

The PISA DATA Service enables any interested party to request a custom report on the PISA data. This is a fee-paying service and is of great benefit to policy makers and researchers worldwide. A minimum fee of $100 applies for queries relating to the PISA 2000 dataset and an initial assessment of requests. Queries are processed and considered by a psychometrician familiar with the micro-level PISA 2000 database.

Access to the service and the data is through the website www.acer.edu.au/pisadata.

The PISA report *15-Up and Counting, Reading, Writing, Reasoning...How Literate are Australia's Students?* is available on the ACER website www.acer.edu.au/research/projects/pdf/PISA_Report.pdf and in hard copy from sales@acer.edu.au.

Examples of graphs created from the website

ST36Q02 How often do you read these materials because you want to? Comic books

Australia

ST03Q01 Which of the following best describes the community in which your school is located?

SC01Q01 Are you female or male?

Monash University – ACER

**Centre for the Economics of Education and Training
(CEET)**

Economics of education

The Centre for the Economics of Education and Training (CEET) seeks to bring an economics perspective to the investigation of issues associated with education and training. The centre is an Australian National Training Authority funded national Vocational Education and Training (VET) research centre sponsored by ACER and Monash University. It has several related research themes:

The financing of education and training
Research topics include: funding required to meet the National Goals of Schooling; main drivers of school costs; financial aspects of VET in schools in Victoria; HECS-style loans and increased fees for TAFE students; higher education Student Financial Supplement Scheme.

Education and training participation and outcomes
Research topics include: participation in and returns to schooling, firm-based training, VET and higher education; completion rates in VET and higher education.

Demand and supply of skills
Research topics include: factors affecting the demand and supply of skills; job turnover and replacement demand.

Education and training policy and institutional arrangements
Research topics include: user-choice and the introduction of competitive tendering in VET; impact of market reforms on private providers of VET; approaches to lifelong learning.

CEET's 2002 conference

VET: Connections, Costs and Contradictions (August 2002, Melbourne)

Papers from the conference include:

• Industry support for training – an international perspective (Vladimir Gasskov)

• The costs of VET (Gerald Burke)

• Contradictions and challenges: User choice c2002 (Fran Ferrier & Chris Selby Smith)

• HECS & VECS: Reflections on a student loans scheme for VET (Mike Long & Gerald Burke)

• Lifelong learning and the world of work: CEET's survey for the OECD (Chris Selby Smith & Fran Ferrier)

• Connecting education and training to the labour market (Chandra Shah)

These conference papers and other CEET research and working papers can be downloaded from www.education.monash.edu.au/centres/ceet.

Recent working papers

• No. 39: Australians working in a global economy and what this means for education and training (Leo Maglen)

• No. 40: User Choice: Do the size and location of the firm make a difference? (Fran Ferrier & Chris Selby Smith)

• No. 41: What is Happening to Training? What the ABS Surveys Tell Us (Michael Long)

• No. 42: Leading edge enterprises: Insights into employment and training practices (Michael Long & John Fischer)

• No. 45: Workplace Training: The Experience of Young Australian Workers (Michael Long)

**For further details on CEET's work contact:
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Providing World-Class School Education
What can Australia learn from international achievement studies?

Australia does very well in international comparisons of its schools, but some other countries show that Australia could do better according to OECD Director of Education, Dr Barry McGaw.

Dr McGaw made this observation in a keynote address to ACER's Research Conference 2002 *Providing World-Class School Education: What Can Australia Learn from International Achievement Studies?* held in Sydney on 13–15 October.

The conference reviewed Australia's results in international achievement studies — including the OECD's Programme for International Student Assessment (PISA), the IEA International Civic Education Study and the Third International Mathematics and Science Video Study — and examined what Australian educators could learn from international comparative studies of this kind.

Other keynote speakers included Professor Judith Torney-Purta from the University of Maryland and co-ordinator of the international Civic Education Study,

and Dr Hillary Hollingsworth of Lesson Lab at the University of California Los Angeles.

ACER CEO Professor Geoff Masters said the conference had been a resounding success. 'This year's conference was attended by a significant number of senior staff from education authorities around Australia, and also attracted participants from New Zealand and as far away as Japan,' he said.

'The keynote addresses were of high quality and succeeded in raising levels of awareness of international achievement studies and of what Australia is learning from these studies.'

The conference proceedings can be viewed on the ACER website at www.acer.edu.au/workshops.

Research Conference 2003 will be held at the Carlton Crest Hotel in Melbourne on 19-21 October 2003 on the theme *Building teacher quality: What does the research tell us?*

Cunningham Library services

Educational research findings are now accessible online through ACER's Cunningham Library.

EdResearch Online is an easily searchable database containing more than 12 000 research articles and documents. The database contains bibliographical details and links to the full text of over 9 000 (or 75%) articles and documents that are available free of charge on the World Wide Web. The full-text of a further 3 000 (or 25%) journal articles for which copyright access has been negotiated are available on a fee-for-service basis.

The database contains over 6 000 documents published from 2000 onwards. All of the journals subscribed to are Australian journals related to education research. Documents include journal articles, research reports, government reports, theses, conference proceedings and papers.

Cunningham Library also now offers a Complete Article Service providing users with immediate access to scanned images of the full text of articles selected from 120 Australian journals on a fee-per-use basis to cover copyright and processing costs.

Cunningham Library Manager Ms Margaret Findlay describes the service as a breakthrough. 'Many of the articles available

through EdResearch Online would otherwise be available only by subscribing to the journals or purchasing a copy of an article through an inter-library loan. EdResearch Online allows users to immediately download copies of the articles they are looking for,' Ms Findlay said.

'We are now able to offer a virtual library online. The library catalogue and a database of higher research theses are all there along with the ability to download journal articles on demand.

'These services provide easier access to Australian research information and are in keeping with ACER's objective of making research findings more accessible to the education community.'

Interest in the service has increased rapidly since it was launched in mid 2001, with most hits on the site originating in the United States. Some 280 educational institutions around the world, including many leading universities, have established links from their own websites to EdResearch Online.

For further information about the Cunningham Library and its range of services, including details of the Library Membership Services or EdResearch Online, visit the library's website at www.acer.edu.au/library

Centre for Professional Learning 2003

ACER offers a suite of professional development options for teachers, psychologists, parents, human resource professionals, researchers and policy makers.

Options for 2003 include:

- Selection from a generic calendar of professional development activities presented Australia-wide;
- Individual design of sessions for small or large groups;
- Customised series of sessions for schools or regions;
- Interactive workshops;
- Topic specific conferences; and
- Delivery in your workplace or at convenient locations throughout Australia.

ACER invites you to discuss the possibilities of professional development designed specifically to meet your needs.

A sample of topics and presenters for 2003:

EDUCATION

Developing Mathematical Thinking

Session: Problem solving is an integral part of all mathematics learning. It should not be an isolated part of the mathematics program but involve all content areas. Contexts for problems can vary from familiar experiences involving students' lives or the school day to applications involving the sciences or the world of work. Good programs will integrate multiple topics and will involve significant mathematics.

Presenter: George Booker

Stop Think Do

A Program for motivating children's social and learning skills

Session: This session introduces the STOP THINK DO program to support parents and classroom teachers in the development of:

- Social skills training for children;
- Behaviour guidance strategies; and
- Motivating children's learning.

Presenter: Lindy Petersen

Primary School Science Assessment

Linking Learning Outcomes to Activities

Session: This session is designed to indicate how science skills, processes and procedures can be linked to hands-on activities to produce meaningful assessment information. Examples of classroom activities will be demonstrated and participants will learn how to get started in matching outcomes (focusing on CSF 11) to activities. Examples of accompanying questions that address the targeted learning outcomes will be presented along with some guidelines for writing such assessment questions.

PSYCHOLOGY/SOCIAL WELFARE

Safe Anger Release

An Introduction to Expressive Therapies

Session: This highly experiential introductory day will model practical ways of dealing with anger, frustration, and the disruptive acting-out of children and adolescents. Expressive Therapy tools such as drawing, bioenergetics, emotional release exercises and relaxation will be introduced. As well as presenting the framework and principles of Emotional Release Counselling, there will be a focus on boundary setting, bringing closure after release work and supporting integration.

Presenters: Mark Pearson & Helen Wilson

HUMAN RESOURCES

PINPOINT Personality Assessment

Session: PINPOINT is an occupational personality instrument, providing an assessment of an individual's most likely behaviour in work situations.

Presenter: Marian Power

Recruitment & Selection

Session: This practical workshop focuses on how to recruit practically, looks at effective recruitment strategies, as well as, appropriate psych testing available. Participants will gain a clear understanding of the steps required to successfully complete the recruiting process, how to interview efficiently and how to recruit the 'right' candidate.

Presenter: Jo Leonard

PARENT EDUCATION

Parenting Today

Train the Trainer Program

Session: Parenting today is a structured, accessible and well-trialled Australian parenting program. It aims to address the needs of parents and professionals who want to influence their children's behaviour in a positive way. This two-day Train the Trainer program provides teachers with the skills to train and support parents to choose and use effective parenting behaviours.

Presenter: Ailsa Drent

For workshop information and registration forms, see the ACER web page (www.acer.edu.au) or contact the Centre for Professional Learning
Tel *(03) 9835 7447* **Fax** *(03) 9835 7457*
Email *workshops@acer.edu.au*