Research
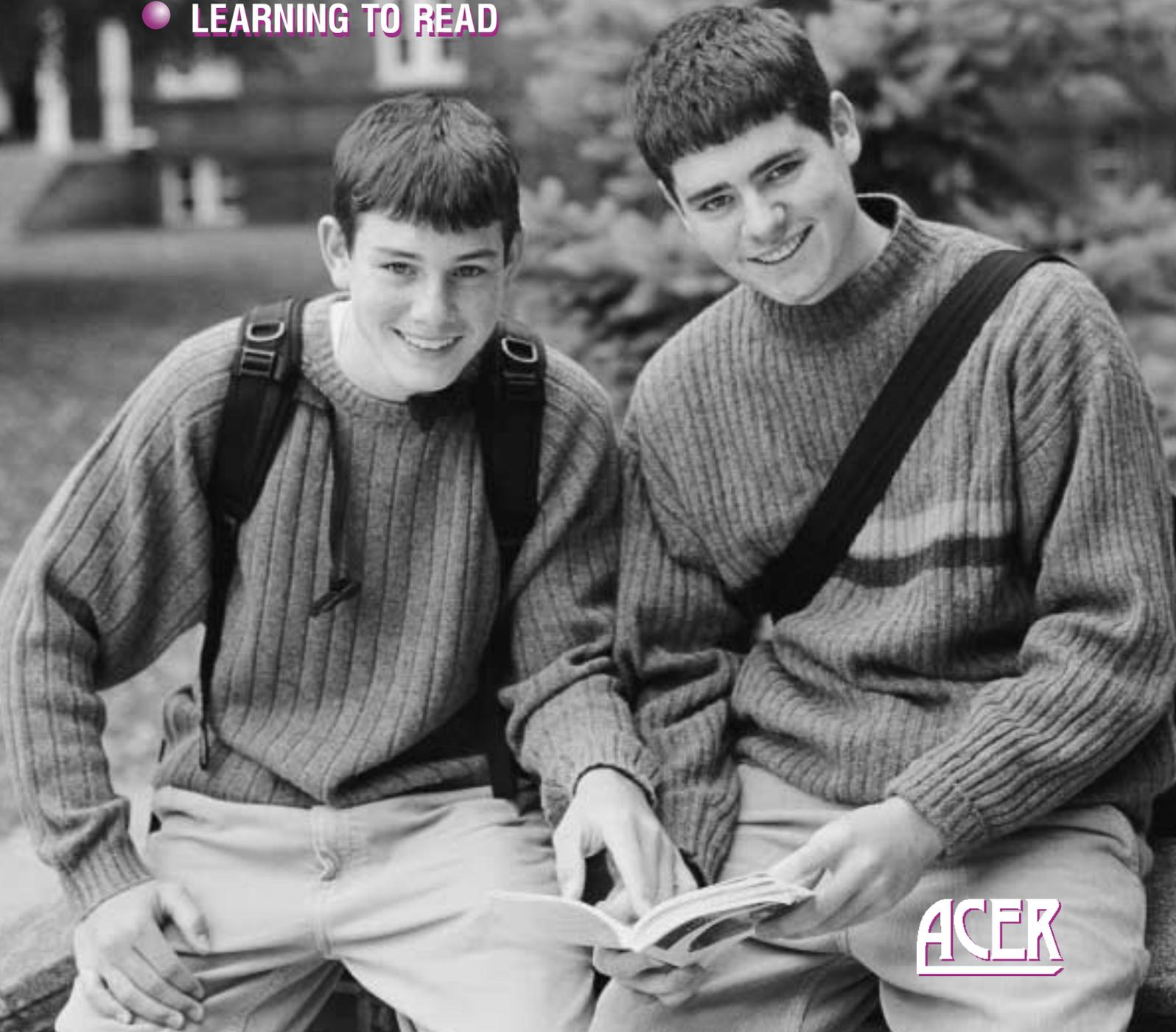# developments

NEWSLETTER OF THE AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH

- MIDDLE YEARS LITERACY
- STAYING AT SCHOOL
- LIFELONG LEARNING
- LEARNING TO READ

ACER

Improving literacy learning in the middle years of school

Schools put a lot of time and effort into working with students who need help with literacy skills. What policies and practices are effective in improving literacy learning?

The Successful Interventions Literacy Research Project investigated literacy intervention programs and strategies used in Year 7 in 44 secondary schools.

Project director, Ms Marion Meiers, said "We were given a very broad brief for this project. We were asked to observe and analyse a wide range of existing literacy intervention programs and strategies. The overall purpose of the study was to provide a research base for developing advice for the further development of literacy intervention in the middle years of schooling."

The research approach was designed to collect both qualitative and quantitative data. The qualitative data included teachers' reports, site visits, classroom observations, and individual student case studies. ACER's *Developmental Assessment Resource for Teachers* (DART) English was used to measure students' literacy achievement at the beginning and end of Year 7. These materials provided a means of mapping growth in reading and writing over the course of a whole school year.

The data indicated that five strategies were significant in improving literacy learning in the secondary school context:

- linking support for low achieving students to teaching and learning in all learning areas;
- monitoring and collecting evidence of improved literacy learning;
- increasing students' self-esteem, confidence and motivation;
- changing attitudes and beliefs about responsibility for literacy learning in secondary schools; and
- developing teacher knowledge about literacy learning and expanding teaching repertoires.

"These are the things that were central to successful literacy intervention programs, and our discussions with teachers confirmed that they also thought these were important," Ms Meiers said.

What can schools do to improve literacy learning?

The study found that schools achieved better than expected student performance when school policies and teaching practices operated within the following framework:

- professional leadership;
- strong professional knowledge and understanding of literacy learning and effective teaching and learning strategies;
- monitoring and assessment to identify students who need additional support;
- targeted support for individual students requiring additional assistance, drawing from a wide repertoire of strategies;
- communication between teachers across all Key Learning Areas, and recognition of the role of literacy learning in all Key Learning Areas;
- close connections between the additional support and the mainstream curriculum; and
- clear communication between home and school.

"At the classroom level, we found that it was beneficial to provide, among other things, opportunities for one-on-one support from teachers and teaching aides; materials and activities that engaged students' interests; and regular planned opportunities for students to engage in sustained reading and writing activities," Ms Meiers said. In some cases, information communication technologies provided students with fresh opportunities to develop and demonstrate literacy skills.

As part of the study, background information about the students was collected, classes were observed, and further information gathered through teacher logbooks. The logbooks provided important insights into the impact of literacy programs and strategies over time. One teacher commented on the overall value of keeping the logbook: "Having been involved in this research project has been very useful. It has given me a chance to reflect and consider more systematically the progress of our program. Writing in the journals has been beneficial too. I have taken photocopies and will use my notes to help with planning for 2000 and beyond."

Observations and teacher reports revealed that all programs and strategies used resulted in an increase in confidence and self-esteem for those students involved. One teacher noted that "The main gains that they have made in the program are in self-esteem, I think, and confidence, a willingness to take risks, go back to class and ask questions".

There were various factors that influenced the capacity of schools to support students experiencing difficulty in literacy, including funding, timetabling, expertise and continuity of

learning. Teachers' access to professional development relating to knowledge about literacy learning and the repertoire of teaching strategies for supporting low-achieving students was generally limited. Schools frequently reported the need for considerable time to allow for familiarisation and adjustment of the literacy programs.

The research was undertaken by ACER for the Victorian Department of Education, Employment and Training, the Catholic Education Commission of Victoria, and the Association of Independent Schools of Victoria within the Secondary School Literacy and Numeracy Initiatives funded by the Commonwealth Department of Education, Training and Youth Affairs.

The full report will be available in the Middle Years section of the Victorian Education Department web site (www.sofweb.vic.edu.au/mys) at the end of November.

What does a successful literacy intervention program look like?

What do successful literacy intervention programs look like?

The study did not aim to evaluate particular literacy programs, but drew out the key principles of programs that improved students' literacy learning. These principles spanned three zones of school practice: whole school practices; classroom practices in all key learning areas; and practices for specific interventions.

Successful intervention programs shared many of the following qualities:

- Leadership, professional support and coordination provided by a school literacy coordinator with significant experience and knowledge of literacy education.

- Organisational structures and timetabling which allow for flexible and varied groupings of students.

- Teaching, in explicit ways, the curriculum literacies of each learning area.

- Identifying and matching support to students' specific literacy learning needs.

- Providing opportunities for students to practise reading a range of texts silently and aloud, and to write short and sustained texts.

- Recognising the importance of fostering confidence and self-esteem.

- Assisting students to develop more effective organisational skills.

- Linking the support provided in out-of-class settings with the work of the regular classroom.

- Acknowledging and celebrating students' progress.

- Providing intensive support for students for a short period, or sustained support over a longer period.

- Selecting reading materials and purposeful writing activities which engage students' interests.

- Establishing effective links between home and school.

Staying at school important

Finishing Year 12 has become even more important for young people seeking work, according to a new ACER report, *Non-completion of school in Australia: The changing patterns of participation and outcomes.*

The proportion of young people who completed Year 12 doubled from the mid-1980s to the mid-1990s, but those who left school early during the 1990s were more at risk of unemployment.

The proportion of early school leavers declined substantially from about 65 per cent to 25 per cent between the mid-1980s and the mid-1990s. The smaller group of young people who did not complete Year 12 in the mid-1990s experienced longer periods of unemployment.

The percentage of those males who did not complete Year 12 who were unemployed for most of their first post-school year doubled between the early 1980s and the mid-1990s — from 14 to 30 per cent. This change in the prevalence of unemployment occurred despite the much smaller numbers of non-completers in the mid-1990s. The situation for females was similar, with 23 per cent of those who did not complete Year 12 being unemployed for most of their first post-school year in the early 1980s compared to 37 per cent in the mid-1990s.

"This report has made it clear that those who do not complete school find it hard to gain secure jobs and face a greater risk of exclusion in a society that requires active learning well beyond the school years. It's particularly important that we develop policies that encourage young people to complete Year 12 and improve their opportunities for further learning," says Dr Phillip McKenzie, Deputy Head of Policy Research at ACER.

The combined effects of labour market changes, economic recession and changes in income support and curriculum policy helped to keep young people at school during the 1980s and early 1990s.

In the mid-1990s a higher proportion of students completed Year 12 than in the early 1980s. In 1982, about 35 per cent completed Year 12, and by 1994, the proportion had doubled to 76 per cent. The gap between those who did and did not complete Year 12 narrowed most among those from low socio-economic backgrounds, and those from government schools.

Despite these substantial improvements, the main indicators of non-completion stayed the same. Those who do not complete Year 12 are still more likely to be from lower socio-economic status backgrounds, rural areas, and government schools.

Some gaps even increased. For example, compared to the early 1980s, non-completers in the mid-1990s were more likely to come from rural areas.

The main reasons given by young people for not completing Year 12 focus on getting a job or an apprenticeship or earning some money. In the early 1980s, 67 per cent of males reported this as their main reason for not completing school. The rate in the mid-1990s remained almost the same: 65 per cent.

Negative experiences of school are increasingly a motivation for young people to leave school before completing Year 12. In the early 1980s 16 per cent of males said their main reason for not completing Year 12 was that they did not like school or they were not good enough at school work. By the mid-1990s, 21 per cent cited this reason. For females, the rate increased from 24 percent to 27 per cent in the early 1990s.

"Those who do not finish school are often those who do not do well at school. Raising the levels of achievement of those at risk is essential," Dr McKenzie said. "We also need to make sure that those who do not complete school have opportunities later on to re-enter education and training."

"This report has made it clear that students who do not complete school find it hard to gain secure jobs and face a greater risk of exclusion in a society that requires active learning well beyond the school years. It's particularly important that we develop policies and programs that encourage young people to complete Year 12 and improve their opportunities for further learning."
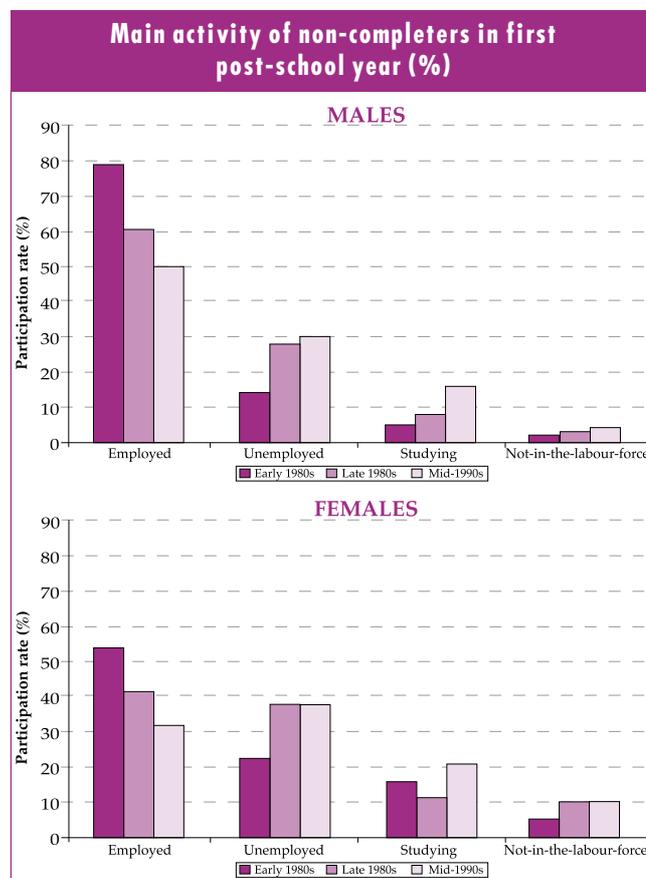
for job prospects

"It is also important to ensure that young people are not just participating in education and training to occupy their time but are engaged in programs that are appealing, relevant to their futures, and which promote skills and knowledge that will ensure their long-term employability and active participation in society," Dr McKenzie said.

The report also emphasised the important role played by apprenticeships in providing a structured pathway to employment for those who did not complete Year 12. However, this was more so for males than females, with relatively few apprenticeships being taken up by girls in the mid-1990s.

The study looked at approximately 5300 students from the 1980s and 1990s. Current ACER research is following up the employment outcomes of young people who left school in the late 1990s.

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

Lamb, S., Dwyer, P. and Wyn, J. (2000). *Non-completion of school in Australia: The changing patterns of participation and outcome*s, LSAY Research Report No. 16, Melbourne: ACER.

Main activity of non-completers in first post-school year (%)

MALES — Participation rate (%): Employed, Unemployed, Studying, Not-in-the-labour-force. Series: Early 1980s, Late 1980s, Mid-1990s.

FEMALES — Participation rate (%): Employed, Unemployed, Studying, Not-in-the-labour-force. Series: Early 1980s, Late 1980s, Mid-1990s.

The report *Non-completion of school in Australia: The changing patterns of participation and outcomes* 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). The report was written in conjunction with the Youth Research Centre of the University of Melbourne.

LSAY studies the progress of several cohorts of young Australians between school, post-secondary education and training and work. The oldest cohort was born in 1961, while the youngest was a nationally representative sample of Year 9 students selected in 1998. The information from the surveys is used to provide a picture of what young Australians are doing and how this picture changes both as the cohort gets older and compared with other cohorts.

Issues investigated in the LSAY project include school completion, participation in vocational and university education, part-time work, unemployment, earnings and school achievement.

Further information about LSAY can be found on the ACER web site: www.acer.edu.au

Developing lifelong learning in secondary schools

Today's young people need to be flexible and adaptable to meet the frequently changing challenges they will face in their lives after school.

People who are not able to anticipate and adapt to change – to continue learning throughout their lives – are likely to become increasingly marginalised in economic and social life, according to a new ACER review paper, *The era of lifelong learning: implications for secondary schools.*

"While most schools already give students skills for life, different elements of learning could be brought together more to build on and reinforce each other," one of the authors, Ms Jennifer Bryce said.

"A key change for secondary schools is to immerse their students, to a greater degree than ever before, in the world outside school – particularly the world of work. This will involve not just simple work experiences, as in the past, but giving opportunities for developing and honing personal skills, particularly in information technology, boosting self-esteem and personal confidence, and maximising opportunities for the display of enquiry, enterprise and imagination in the world beyond the school fence.

The traditional focus on 'learning skills' will be much more effective if designed around students developing personal learning plans linked to settings outside the classroom and oriented towards more applied learning."

The central role of schools in equipping students with essential knowledge, skills and attributes will not change, but what is now to be considered 'essential' has changed – or rather enlarged in scope – far beyond 'basic skills' and previous notions of 'core curriculum'.

Schools will need to consider how they can change their practice to become promoters of lifelong learning. "For most schools this will not require substantial increases in material resources but will require a process of reorientation, particularly in relation to the notion of what it means to be a teacher and what it means to be a learner," Ms Bryce said.

Key areas that should be considered when preparing school leavers with a lifelong learning orientation are:

Becoming an 'information literate' individual

An information literate person recognises when information is needed and then locates, evaluates and uses the information effectively.

Questioning, reasoning about, justifying the relevance of, and evaluating information

The knowledge base of the lifelong learner is characterised by its breadth and depth – they are able to synthesise, analyse and evaluate this raw information.

Values, dispositions and attitudes associated with lifelong learning

Lifelong learners need to face change with confidence, and value change for its possible positive outcomes. They are ready to change personal direction when new and interesting arenas for learning emerge, and are able to predict the kinds of skills and information needed for the new situations they encounter.

Generic skills that promote lifelong learning

Lifelong learners will have well developed generic skills in areas such as problem solving and communication.

Developing a strong personal self-concept that assists learning

The development of a positive self-concept or high self-esteem in students is an important educational goal in itself. A positive self-concept can enhance students' motivation, persistence and attitude towards learning, and their achievement.

"Lifelong learning is far broader than the provision of second-chance education and training for adults. It is based on the view that everyone should be able, motivated and actively encouraged to learn throughout life. This view of learning embraces individual and social development of all kinds and in all settings: formally, in schools, vocational, tertiary and adult education institutions; and non-formally, at home, at work and in the community."
OECD 1997

Helping people learn how to learn

Lifelong learners need to be taught how to use a range of learning strategies which will enable them to achieve their learning goals, including basic cognitive strategies which assist them to remember information and other study skills such as time management.

Promoting lifelong learning

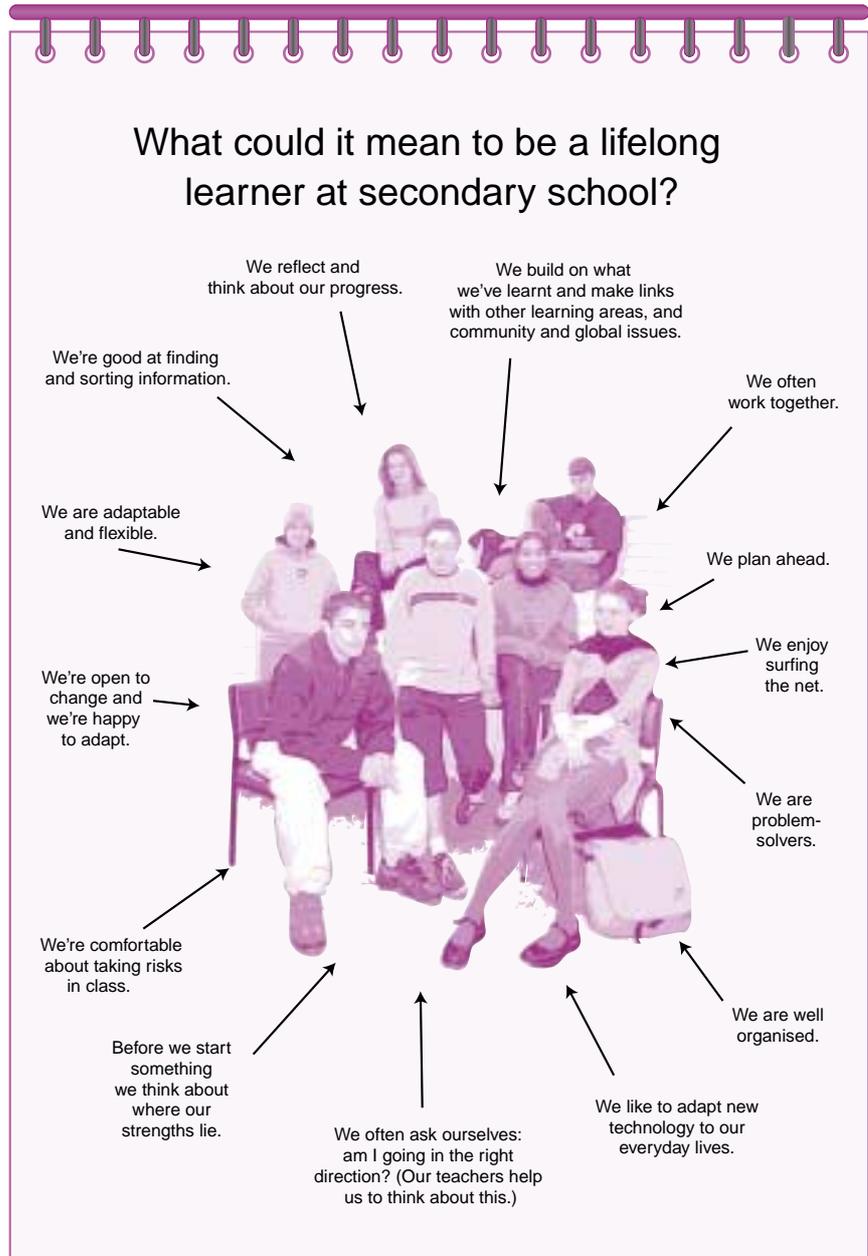The review paper identifies what schools, teachers and students can do to promote lifelong learning.

"Schools can structure the curriculum so it is easy to make connections from one field of study to another, recognise the importance of information literacy skills in all learning areas, establish partnerships with local community groups to support student learning, and encourage assessment policies to recognise student learning that takes place out of school," Ms Bryce said.

Teachers can use strategies which support young people to take control of their own learning and provide regular feedback to students on their attempts to do this. Professional development may also enhance teachers' understanding of the learning process.

"It is important that teachers are lifelong learners themselves, and that they see themselves as facilitators and mentors, rather than dispensers of knowledge," Ms Bryce said.

"Students can also develop their own capacity for lifelong learning by making use of the community outside school as a source of knowledge, reflecting on the modes of learning that best suit them and recognising that their teachers are learning as well as teaching," Ms Bryce said.

What could it mean to be a lifelong learner at secondary school?

We reflect and think about our progress.

We build on what we've learnt and make links with other learning areas, and community and global issues.

We're good at finding and sorting information.

We often work together.

We are adaptable and flexible.

We plan ahead.

We're open to change and we're happy to adapt.

We enjoy surfing the net.

We are problem-solvers.

We're comfortable about taking risks in class.

We are well organised.

Before we start something we think about where our strengths lie.

We often ask ourselves: am I going in the right direction? (Our teachers help us to think about this.)

We like to adapt new technology to our everyday lives.

The paper will be available on ACER's web site (www.acer.edu.au) and is available for purchase from ACER Press Customer Service, telephone: 03 9835 7447, fax: 03 9835 7499; email: sales@acer.edu.au

Bryce, J., Frigo, T., McKenzie, P. & Withers, G. (2000). *The era of lifelong learning: implications for secondary schools.* Melbourne: ACER.

Learning to read in the

The Literacy Advance Research Project investigates the effectiveness of various approaches to the enhancement of literacy.

It is estimated that between 10 and 20 per cent of primary school children experience literacy problems.

"Too many children appear to not be getting foundation skills, and if they don't it means they have fewer opportunities for participation in society. The Literacy Advance Research Project looks at what educators are doing to address this, and also asks what *should* we be doing?" says ACER Deputy Director Dr John Ainley.

Schools create their own literacy plans

The Catholic Education Commission of Victoria implemented Literacy Advance in 1997 to enhance literacy learning for students in its primary schools. Schools were invited to document a literacy plan based on one of six widely used approaches to literacy teaching:

- Three whole school approaches (West Australian First Steps, the Children's Literacy Success Strategy, and the Early Years Literacy Program)

- An Approved School-Designed program (ASD)

- An individual intervention program called Reading Recovery (RR)

- A staff development program that focused on literacy called ESL in the Mainstream

Additional funds were made available to schools on the basis of their documented plans, and they were also required to appoint a teacher as Literacy Co-ordinator and to systematically monitor children's progress.

A longitudinal research design to document growth and recognise influences

The Literacy Advance Research Project is a collaborative venture of ACER, the Catholic Education Commission of Victoria and The University of Melbourne, Centre for Applied Educational Research. Its report *Learning to Read in the Early Primary Years*, written by Dr John Ainley and Ms Marianne Fleming, documents the programs and outcomes which resulted from the Literacy Advance initiative. It aims to analyse the effectiveness of different approaches to literacy, to investigate the implementation of Literary Advance, and to explore a range of school, classroom and background influences on the development of literacy.

LARP's research design is longitudinal. Now in its third year it is being conducted at 160 schools and involves some 4000 students. It makes four assessments of literacy performance (at the beginning and end of each year) and collects qualitative as well as quantitative data.
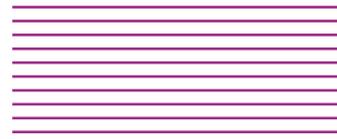
Variations in teaching approaches to literacy

The LARP report comments that there are many conflicting views and "no single commonly accepted teaching approach to literacy learning across education systems". It details the changing trends in teaching approaches over time, and concludes that:

"The result of the debate so far has therefore been an understanding of the importance of context and skill development and how both are important to children's emerging literacy skills. The question is not one or the other but how to use both and in what balance."

"Too many children appear to not be getting foundation skills, and if they don't it means they have fewer opportunities for participation in society. The Literacy Advance Research Project looks at what educators are doing to address this, and also asks what should we be doing?"

early primary years

Wide variations in teaching approaches to literacy, and in the plans with which individual schools approached Literacy Advance were observed. Most adopted a literacy approach with five common key features:

- The Literacy Block – a daily uninterrupted block including independent, guided and shared reading, spelling and writing.

- The Literacy Co-ordinator – a teacher on full or part-time basis with time release.

- Parental Assistance in the Literacy Program – parental assistance both at home and at school is seen to play a vital role in the literacy programs of schools.

- Programs for students with special needs.

- Monitoring student progress.

"When it came to assessing the effectiveness of schools' literacy plans it was clear that individual intervention (such as Reading Recovery) is important for many children and effective for those who use it – but it was required on a far wider scale than was practicable," says Dr Ainley.

"The ClaSS (Children's Literacy Success Strategy) approach was seen to be more effective than other approaches in Year 1 because it is a systematic structure, with school decisions based on a close involvement with the developers and researchers, and a whole school commitment to it."
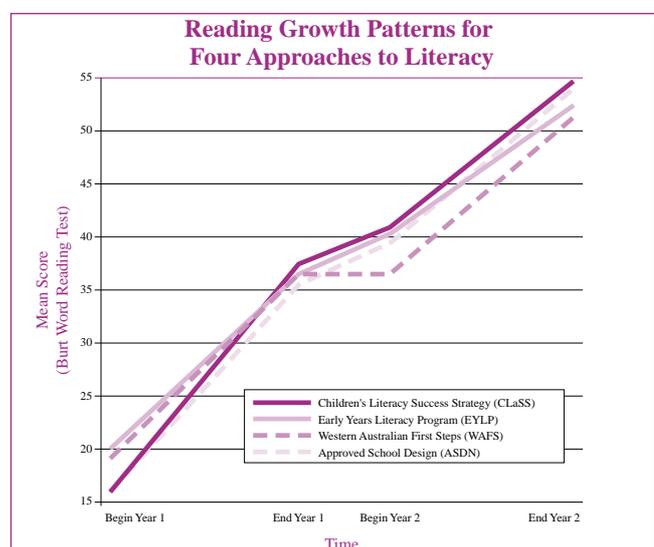
The report concludes that schools are actively implementing various features of Literacy Advance and that implementation is a continuing process in which recognition that the change will benefit students plays a key role.

Patterns of growth in reading performance

Among the most important results of the LARP report is its finding that it is what a child knows or has done at the beginning of the first years of school which has the most influence on their performance at a later assessment point. This of course carries great import for parents and pre-school educators. The literacy approach adopted by schools is also shown to be significant in the LARP study.

In addition Dr Ainley points to the importance of a child's motivation "We need to catch and hold their interest in reading, because our analysis shows that there is more growth among children who are more engaged with the process of literacy."

The report has been distributed to Catholic primary schools in Victoria. Further information will be on the Catholic Education Commission of Victoria website early next year. (www.cecv.melb.catholic.edu.au)

Reading Growth Patterns for Four Approaches to Literacy

Legend:
- Children's Literacy Success Strategy (CLaSS)
- Early Years Literacy Program (EYLP)
- Western Australian First Steps (WAFS)
- Approved School Design (ASDN)

Mean Score (Burt Word Reading Test) — vertical axis (15 to 55)
Time — horizontal axis (Begin Year 1, End Year 1, Begin Year 2, End Year 2)

CEET *update*

WHAT IS CEET?

The Centre for the Economics of Education and Training (CEET) is a joint venture of Monash University and ACER in collaboration with the Faculty of Education at the University of Melbourne. Its mission is to conduct and disseminate research on economic and social aspects of education and training in Australia.

CEET is funded by the Australian National Training Authority (ANTA) as a national key research centre on vocational education and training. It also conducts research projects funded by other organisations and government bodies. Dr Phillip McKenzie from ACER is a CEET Director. Details on CEET's structure, staffing and research program are available on the CEET website (see below).

The topic for CEET's National Conference in October was Mobilising Resources for Lifelong Learning. The conference papers are available on the website.

CEET's two-page newsletter, The CEET Sheet, is a convenient way of keeping up-to-date with the Centre's latest projects and research findings. The newsletter is also available free of charge.

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

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Monash University
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Fax (03) 9905 9184 Phone (03) 9905 9157
Email: ceet@monash.edu.au
Website: www.education.monash.edu.au/centres/CEET

RECENT WORKING PAPERS

Working Papers are available free from the CEET office, or from the website.

26. Hopkins, Sonnie (2000), *VET and the voluntary sector: dealing with ambiguities*.
27. Shah, Chandra (2000), *Employment shifts in the TAFE workforce in Victoria, 1993–98*.
28. Selby Smith, Chris & Ferrier, Fran (2000), *CEET's stocktake of the economics of vocational education and training*.
29. Long, Michael (2000), *Analysis of longitudinal data: participation in VET*.
30. Burke, Gerald (2000), *Financing vocational training and lifelong learning*.
31. McKenzie, Phillip (2000), *Pathways for youth in Australia*.
32. Maglen, Leo & Hopkins, Sonnie (2000), *Australia in the Emerging Global Knowledge Economy: Changing Employment Patterns – 1986–87 to 1999–00*.

ACER to continue leading international study

ACER has won the contract to conduct the next stage of the Program for International Student Assessment, until 2003.

Eight thousand Australian students sat the world's biggest global test in reading, maths and science in July.

The OECD Program for International Student Assessment (PISA) will compare the results of 220,000 15-year-olds in 32 countries, including the USA, UK, the major European countries, Japan, Korea and Russia.

In an honour for Australia, the OECD has chosen ACER to analyse and compare the results of the 32 countries.

"This survey is unique in that it does not test how well students have learned their school's curriculum, but how well prepared they are for life in the 21st century," ACER Executive Director, Dr Geoff Masters said.

Testing in all 32 countries is now completed and the first results are scheduled for worldwide release in 2001.

New teaching and learning focus

ACER recently announced the appointment of Associate Professor Lawrence Ingvarson to head its new Teaching and Learning division.

A key focus of the new division will be on understanding and supporting learning in both formal instructional settings and informal learning contexts, and in supporting the professional development and work of teachers. Lawrence Ingvarson, who has an international reputation for his work at Monash University in the areas of teacher professional development and the development of professional standards for teachers will commence at ACER in January 2001.

Guide to international achievement studies

A POLICY
MAKER'S
GUIDE TO

**International
Achievement
Studies**

Margaret Forster
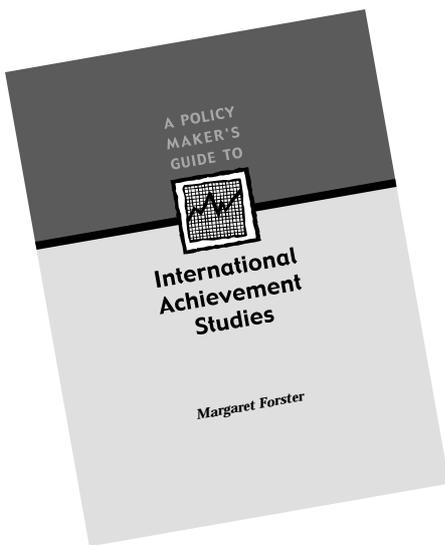
ACER has just completed the first in a series of handbooks to provide policy makers and practitioners with relevant, reliable and useful information about assessment and reporting practices which impact positively on student learning.

The first handbook, *A Policy Maker's Guide to International Achievement Studies,* is designed to provide education policy makers, system managers and school personnel with information about international surveys of student achievement.

Australian schools have participated in several international achievement studies in recent years, including the OECD Programme for International Student Assessment (OECD/PISA) and the Third International Mathematics and Science Study (TIMSS).

Education systems monitor student learning – with the intention of promoting learning – by collecting, analysing and reporting student achievement data. This review paper covers topics such as the purposes of international achievement studies, how data are collected and reported, how results from international studies can and have been used in educational decision making, and common concerns about this type of testing.

The review paper provides a useful explanation of how to read and interpret the various graphs and tables frequently used to report international student achievement data.

Handbooks on other aspects of assessment and reporting are under development.

A Policy Maker's Guide to International Achievement Studies will be available on the ACER web site, and will be available for purchase from ACER Press Customer Service, telephone (03) 9835 7447; fax (03) 9835 7499; email sales@acer.edu.au

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Reforming curriculum and assessment in Indonesia

ACER, in conjunction with Curriculum Corporation, will be assisting the Indonesian Ministry of Education to develop and implement a new national curriculum framework and assessment policy in Indonesia's decentralised education system. The project, which is due to be completed in 2002, will include the delivery of professional development to key staff in assessment, reporting and monitoring.

ACER Executive Director, Dr Geoff Masters said, "ACER and the Curriculum Corporation together have considerable expertise in the area of curriculum and assessment reform, and are well placed to work collaboratively on projects such as this to make our experience available to countries undertaking reviews of their curriculum frameworks and introducing new performance monitoring procedures."

Education theses online

The ACER Cunningham Library database of research theses in education from Australian universities is now available from the ACER web site (www.acer.edu.au/acer/library).

The database contains approximately 9000 theses including abstracts. The records currently date back to 1978 but theses from earlier years will soon be available. The theses are also available through Australian Education Index.

The full catalogue of the Cunningham Library will also be available on the web site early in 2001.

Improving numeracy learning: What does the research tell us?

The 2000 ACER Research Conference was held in Brisbane in October, providing Australian educators with a unique opportunity to review the current state of knowledge in numeracy learning. Outstanding international and national numeracy researchers reviewed findings in critical areas of research.

Papers were presented on a variety of topics relating to numeracy, including:

- What kinds of teaching and what other factors accelerate primary pupils' progress in learning numeracy?

- Improving students' numeracy learning: Some insights from the first year of the Early Numeracy Research Project.

- Language implications for numeracy: A study of language use of disadvantaged students.

- International perspectives on numeracy learning: TIMSS and PISA.

- Researching numeracy in the middle years – the Experience of the Middle Years Numeracy Research Project.

- Count Me In Too: Creating a choir in the swamp.

- Improving numeracy learning for Indigenous students.

- Strengthening numeracy – reducing risk.

- Research on mental computation and number sense and its implications for numeracy.

- Constructing scales for reporting growth in numeracy: the ACER Longitudinal Literacy and Numeracy Study.

- Computational numeracy.

The papers are available in PDF format on the ACER web site (www.acer.edu.au).

> ### Understanding Youth Pathways: 2001 conference
> The theme of the ACER Research Conference for 2001 will be Understanding Youth Pathways: What does the research tell us? The conference will be held in Melbourne on 15–16 October 2001.

PD Workshops

The following workshops are planned for next year. Dates and further details will be advised in early 2001. Check the web (www.acer.edu.au/acer/workshops) or contact the Professional Development Unit Administration Officer, telephone (03) 9835 7403, fax (03) 9835 7499, email workshops@acer.edu.au

PARENT EDUCATION / SOCIAL WELFARE

Dealing with Strong Emotions – Anger and Grief

Mark Pearson and Helen Wilson
Melbourne, Sydney

Expressive Therapies to Support Emotional Growth

Mark Pearson and Helen Wilson
Melbourne, Sydney

Pro Active Counselling – Creative Activities to Reduce Problem Behaviour

Mark Pearson and Helen Wilson
Melbourne, Sydney

Safe Anger Release

Mark Pearson and Helen Wilson
Melbourne, Sydney

Sandplay & Symbol Work to Resolve Conflict

Mark Pearson and Helen Wilson
Melbourne, Sydney

HUMAN RESOURCES

Assessment Centre Exercises Course

For selection and development of personnel
Sydney, Melbourne

Occupational Testing Course

Intensive 5-day program
Sydney, Melbourne

PIN-POINT

Personality Instrument Training Course
3-day course
Sydney, Melbourne

Test Administration Course

A practical 1-day workshop
Melbourne, Sydney

EDUCATION

Workshops in Melbourne, Sydney, Brisbane and selected national centres:

Conceptual Thinking in English

Laurance Splitter and Marion Meiers

Counselling Adolescents

Andrew Fuller

Cued Articulation

Fiona Balfe

Cued Vowels

Fiona Balfe

Effective Teaching Practices

Rhonda Farkota

Maths Intervention Program

Cath Pearn

Philosophy for Children

Laurance Splitter

Self Directed Search Workshops

Meredith Shears

Sight Words Made Simple

Marcella Reiter

Stop Think Do

Lindy Petersen

Thinking Mathematically

George Booker

Understanding Adolescent Learning

John Munro

Understanding and Diagnosing Reading Difficulties

John Munro

PSYCHOLOGY

16 PF Masterclasses

Strong Interest Inventory Training Course

Intensive 1-day program
Daiva Verbyla
Melbourne, Sydney, Brisbane

MBTI

MBTI Qualifying Programme

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