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Published June 2003

In this issue:

- [Impact of school libraries on student achievement](#)
- [New database aids research of international education](#)
- [A Good Start to Numeracy](#)
- [Understanding and monitoring children's growth](#)
- [ACER UPDATE](#)

## Impact of school libraries on student achievement

The library is an important, but sometimes overlooked, part of a school.

Research shows that school libraries can have a positive impact on a range of learning areas, including reading scores, literacy, and broader learning.

ACER Research Fellow Dr Michele Lonsdale recently conducted a review, *Impact of School Libraries on Student Achievement: A Review of the Research*, for the Australian School Library Association.

The roles of school libraries and teacher librarians in Australia have changed significantly in recent years. There has been a decline in the number of qualified teacher librarians employed in school libraries, an explosion in information production and the development of increasingly sophisticated information and communication technologies. There have also been changes in educational philosophy and practice, including a greater focus on learning outcomes, inquiry-based learning, evidence-based practice and school accountability.

Dr Lonsdale said, "It is important that these changes to library practice are monitored. Research has shown that school libraries do have an impact on achievement, so changes to library practice could therefore be expected to affect achievement."

Published June 2003

Much of the research relating to school libraries and achievement has been conducted overseas. From this there is evidence to show that, among other things, a strong library program can lead to higher student achievement regardless of the socio-economic or educational levels of the adults in the community.

"The research has also shown that collaborative relationships between classroom teachers and teacher librarians have a significant impact on learning, particularly in relation to the planning of instructional units, resource collection development, and the provision of professional development for teachers," Dr Lonsdale said.

In addition, there is evidence to show that:

- a strong computer network connecting the school library's resources to the classroom and laboratories has an impact on student achievement;
- a print-rich environment leads to more reading and free voluntary reading is the best predictor of comprehension, vocabulary growth, spelling and grammatical ability and writing style;
- the extent to which books are borrowed from school libraries shows a strong relationship with reading achievement while borrowing from classroom libraries does not;
- integrating information literacy into the curriculum can improve students' mastery of both content and information seeking skills;
- a positive difference can be made to student achievement when school libraries co-operate with public libraries; and
- school libraries can make a positive difference to students' self-esteem, confidence, independence and sense of responsibility in regards to their own learning.

However, despite the accumulated evidence, and despite the common sense assumption that school libraries could be expected to have a positive impact on student learning, the contribution of school librarians to student achievement is still not widely recognised, according to Dr Lonsdale. "It is interesting that after five or six decades where research has consistently shown a positive relationship between student achievement and school libraries, that the 'case' for teacher librarians still needs to be made.



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Why are practitioners still needing to convince decision makers and administrators of the positive correlation between school library services and student achievement?"

Given the lack of national data about the current state of school librarianship, particularly in relation to teacher librarians and how they are being used in schools, it may be useful to obtain a snapshot of what is currently happening around Australia in relation to school library staffing.

Anecdotal evidence, and information from some state surveys indicates there is a shortage of teacher librarians; schools sometimes use librarians rather than teacher librarians, or staff with no teaching or library qualifications at all; it is an ageing profession, with insufficient graduates to replace retirees; and teacher librarians often have added responsibilities in terms of technology maintenance and student use of technology.

One survey of Victorian primary schools revealed that some individuals who called themselves librarians did not always have any library qualifications and some who called themselves teacher librarians did not always have a teaching qualification.

There is still a need for further research. Dr Lonsdale said, "Much of the research so far focuses on primary rather than secondary students, but the impact of school libraries appears strongest at primary and junior high school and weakest at the upper levels of secondary school.

"It would also be useful to know why students come to the library, and to determine the relative roles of teachers and teacher librarians and their effectiveness in providing information literacy."

*Impact of School Libraries on Student Achievement: A Review of the Research* is available from the [Australian School Library Association website](#).

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## New database aids research of international education

ACER's Cunningham Library has been contracted by AEI - The Australian Government International Education Network of the Commonwealth Department of Education, Science and Training (DEST) to develop a database on research on international education.

The National Database for Research into International Education (NDRIE) is a searchable web database that contains details of books, articles, conference papers and reports on various aspects of international education from publishers in Australia and overseas published from 1990 onwards. It is the only known database that is dedicated to the study of international education as an industry. The database also maps what research is happening in the area of international education to help identify gaps in research.

The major subject strengths of the database relate to international students, international education, university teaching, distance education, English as a second language, second language teaching, study abroad, international cooperation, exchange programs and marketing of education services.

"This database will be a useful resource for everybody involved in the international education industry including student advisers, international liaison officers, marketers and others," says Cunningham Library Manager, Mrs Margaret Findlay. "It will help people to look after international students better."

While ACER has developed a number of databases in the past for its own customers and clients, including the successful Australian Education Index, this is the first time ACER has been contracted to build a database for an external organisation. The 12-month contract was arranged through ACER's international development unit.

Material in the database is drawn from the Australian Education Index with additional material sourced from a variety of international organisations and publishers.

**Published June 2003**

"This database builds on the strength of the Australian Education Index," says Mrs Findlay.

"DEST selected ACER to undertake the project based on our recognised expertise in indexing materials."

As well as indexing material, the database will also include links to the websites of relevant publishers and organisations.

The database can be searched by keyword, or advanced queries. The database content can also be browsed by country, institution, subject and recent additions. Documents noted in the database can be sourced from the publishers, libraries or, in many cases, are available for free download or for online purchase.

The site contained some 2400 documents upon its launch. Further resources will be added on an ongoing basis. The majority of the documents are Australian. Content from overseas will be added as the database expands.

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## **A Good Start to Numeracy**

ACER researchers recently completed a literature review of the research and practice in early childhood numeracy. *A Good Start to Numeracy* examines research projects into effective early childhood numeracy practices that have been conducted in the last ten years, both within Australia and overseas, and reports key findings related to numeracy at home, numeracy in the pre-school and numeracy in the early years of schools.

The report also identifies effective numeracy strategies, called 'sandpit suggestions' from research and practice in early childhood for parents, teachers and policy makers.

*A Good Start to Numeracy* was undertaken as part of the wider Project Good Start - a longitudinal study of the practices and learning experiences that support early numeracy development. ACER is conducting Project Good Start with funding provided under the Commonwealth. The project will investigate programs and strategies and factors effecting numeracy as children progress from a pre-school setting into the first year of formal schooling.

Project Good Start is funded by the Commonwealth Department of Education, Science and Training through the Numeracy Research and Development Initiative.

*A Good Start to Numeracy* can be downloaded from the [DEST web site](#).

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## Understanding and monitoring children's growth

No concept is more central to the work of teachers than the concept of growth writes ACER Chief Executive Professor Geoff Masters and Senior Research Fellows Dr Ken Rowe and Marion Meiers.

As educators we use many different terms to describe cognitive, affective and personal growth, including 'learning', 'development', 'progress' and 'improvement'. However we describe it, the concept of individual growth lies at the heart of our work as a profession. It underpins our efforts to assist learners to move from where they are to where they could be: to develop higher levels of reading ability, broader social skills, deeper scientific understandings, more advanced problem solving skills and greater respect for the rights of others.

Closely linked to the concept of individual growth is our fundamental belief that all learners are capable of progressing beyond their current levels of attainment. As educators we understand that children of the same age are at different stages in their learning and are progressing at different rates. But we share a belief that every child is on a path of development. The challenge is to understand each learner's current level of progress and to provide opportunities likely to facilitate further growth.

A professional commitment to supporting growth requires a deep understanding of growth itself. What is the nature of 'progress' in an area of learning? What does it mean to 'improve'? What can be watched for as indicators of progress? What are typical paths and sequences of student development? Teachers who are focused on supporting and monitoring the long-term growth of individuals have well-developed understandings of how learning in an area typically advances and of common obstacles to progress-understandings grounded in everyday observations and experience and perhaps also informed by theory and research.

Studies of individual learners and their progress over time are known as 'longitudinal' studies. Longitudinal studies track individuals across their years of schooling (and sometimes beyond school) and provide deeper understandings of learning than can be obtained from 'cross-sectional' studies that consider the achievements of different students at different times.

Published June 2003

By tracking the same individuals across a number of years of school it is possible to identify similarities in learners' patterns of progress. Studies of this kind show that, in most areas of school learning, it is possible to identify 'typical' patterns of learning, due in part, no doubt, to 'natural' learning sequences (the fact that some learning inevitably builds on to and requires earlier learning), but also due to common conventions for sequencing school learning.

The fact that most students make progress through an area of learning in much the same way makes group teaching possible. However not all children learn in precisely the same way, and some children appear to be markedly different in the way they learn. An understanding of typical patterns of learning facilitates the identification and appreciation of individuals who learn in uniquely different ways.

A map of typical progress through an area of learning provides a framework for describing and monitoring growth over time at the level of both individuals and groups. Such a map makes explicit what is meant by growth and introduces the possibility of plotting and studying the growth of individual learners.

[Download the map of numeracy learning in the early years of school](#) developed as part of the ACER Longitudinal Literacy and Numeracy Study (LLANS). The map describes how the numeracy skills of children in this study typically developed over their first three years of school. (The initial national sample of 1000 children was drawn from 100 randomly selected schools.) Growth in numeracy is described on the left of the map, from beginning numeracy skills at the bottom to more advanced skills at the top.

The numeracy progress of children in the LLANS study is shown on the right of the graph. Children's literacy levels were assessed on five occasions during this period. The graph shows that, on average, children's numeracy skills developed most rapidly during their first year of school but developed little between November of that year and March of the following year (a period that included the summer holidays).

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The LLANS example illustrates several important features of longitudinal studies. Firstly, the focus in these studies is on understanding learning as it is experienced by learners. Through longitudinal studies an attempt is made to understand the nature of growth within an area of learning across the years of school. The use of research-based maps of learning to monitor and study children's progress stands in contrast to more traditional curriculum-based approaches that impose a list of learning objectives (or outcomes or competencies) that students are expected to learn and then test to see whether these objectives have been 'achieved'.

Secondly, empirically-based maps of learning provide a basis not only for charting individual and group progress, but also for studying influences on children's learning trajectories. The real potential of longitudinal studies lies in the opportunity they provide to understand factors associated with successful learning and rapid progress and factors that work to impede student growth.

Finally, an empirically-based map of learning provides a frame of reference for displaying and reporting individual and group progress. Education systems and schools can use growth curves plotted against such a map to better understand and report the progress of particular groups of students. Teachers and parents can use plots of growth trajectories to see and understand how learning is progressing for individual children. In these ways, longitudinal studies provide a valuable tool in our professional efforts to promote and facilitate children's growth.

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## ACER UPDATE

### Smith Family Project

ACER has been commissioned by the Smith Family to investigate the post-school plans, parental education level, family structure and lifelong learning orientation of young people. This forms part of their research program into understanding how children and young people from financially disadvantaged backgrounds build on the different forms of support provided by the Learning for Life program to overcome the limits of their disadvantage to make a successful transition into the world of work. The duration of the study will be from July 2003 to December 2003.

### Global Gateways

ACER has been asked by *education.au limited* to update the publication *Global Gateways: A Guide to Online Knowledge Networks*, which was published by ACER last year. The Guide looks at education gateways/portals and at broad trends within the industry and in e-learning more generally. Enquiries about the guide are welcome.

### WAMSE English 2003

This project is the next in a series of Western Australia Monitoring Standards in Education projects, building on a collaboration that is over ten-years old.

This project has two components:

- a) Sampling design and selection of students for Reading and Writing in Year 10 and Speaking and Listening in Years 3, 7 and 10.
- b) Data analysis and reporting of the Speaking and Listening data, including equating to the historical scale. The testing of Speaking and Listening was previously undertaken in 1995 and 1999.

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