

MEDIA RELEASE

ACER releases results from latest international studies of student achievement in reading, mathematics and science

- Australia was significantly outperformed by 21 countries in Year 4 reading
- Australian performances in mathematics and science largely stagnated over the past 16 years

11 December 2012: Reports released today by the Australian Council for Educational Research (ACER) reveal disappointing results for Australia in the latest international study of mathematics and science achievement, and in Australia’s first ever international assessment of reading at primary school level.

Releasing the results, ACER Chief Executive Professor Geoff Masters said, “To say the results are disappointing is an understatement”.

Figure 1: Number of countries

	Year 4			Year 8	
	PIRLS	TIMSS		TIMSS	
	Reading	Mathematics	Science	Mathematics	Science
Significantly higher than Australia	21	17	18	6	9
At a similar level to Australia	6	5	8	8	6
Significantly lower than Australia	17	27	23	27	26

The 2011 Progress in International Reading Literacy Study (PIRLS) assessed approximately 300 000 Year 4 students across the participating countries and provided the first ever internationally comparable information about the reading levels of Australian primary school students. The study revealed that many Australian Year 4 students have substantial literacy problems, with around one-quarter of students not meeting the Intermediate benchmark – the standard generally considered in international achievement studies to be the minimally acceptable standard of proficiency.

The 2011 Trends in International Mathematics and Science Study (TIMSS) assessed approximately 600 000 students in Years 4 and 8 across the participating countries. TIMSS 2011 shows that, with the exception of an improvement in Year 4 mathematics performances between 1995 and 2011, Australian students’ performances in mathematics and science stagnated over the past 16 years. During this same period, a number of other countries either dramatically improved their performances (including Singapore, Hong Kong and Chinese Taipei) or showed steady improvements in performance (including Korea and the United States).

“It is difficult to see how Australia will be in the top five countries by 2025 if we continue on our current path,” said Professor Masters. “We need to look carefully at what improving countries are doing to see what lessons there are for Australia.”

Professor Masters said that between 29 and 37 per cent of Year 4 and Year 8 students in Australia performed below the Intermediate benchmark in mathematics and science. In two Australian states/territories this increased to more than 50 per cent for Year 8 mathematics. By comparison, in Korea and Singapore, seven and eight per cent of Year 8 students performed below the Intermediate benchmark in mathematics.

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“For a developed country like Australia, these results are concerning,” Professor Masters said. He also noted the modest proportion of Australian students achieving at the High and Advanced international benchmarks.

“These latest results underline the enormous challenge we face if we are to lift Australian achievement levels in reading, mathematics and science to the levels of the highest performing countries. This challenge will not be met by any single strategy, but will require a well-planned and coordinated effort on the part of governments, education systems, schools, parents and the broader community,” Professor Masters said.

Questionnaires were used in PIRLS and TIMSS to gather information from students, parents, teachers and school principals. Findings from this additional information included:

- Students attending schools in which principals reported no resource shortages scored significantly higher in reading and mathematics (but not in science) than students attending schools in which principals reported being affected by resource shortages.
- More than half of the Australian Year 4 and Year 8 students participating in PIRLS and TIMSS were in schools that reported being ‘somewhat’ affected by resource shortages.
- Only around half of Australian Year 4 students in TIMSS were being taught science by teachers who felt ‘well-prepared’ to teach science topics – dropping to less than half for the areas of physical and Earth sciences.
- More than 20 per cent of Year 8 students were being taught mathematics by teachers who reported feeling only ‘somewhat’ confident in teaching the subject. The percentage was similar for Year 8 science.

Professor Masters said these findings highlighted the need to address the issue of ‘teaching out of field’ in secondary schools as well as current levels of preparation to teach primary science.

“Strong subject knowledge, as well as knowledge about how to teach subjects, is essential to teachers’ abilities to address learning difficulties and to challenge and extend higher-achieving students,” Professor Masters said.

TIMSS and PIRLS are projects of the International Association for the Evaluation of Educational Achievement (IEA) and are directed by the TIMSS & PIRLS International Study Center at Boston College. The Australian Council for Educational Research (ACER) manages the implementation and reporting of TIMSS and PIRLS within Australia.

TIMSS has measured trends in mathematics and science achievement every four years since 1995. 2011 marked Australia’s fifth cycle in TIMSS, following participation in 1995, 1999, 2003 and 2007. PIRLS has measured trends in reading comprehension at the fourth grade every five years since 2001. 2011 was Australia’s first participation in PIRLS. TIMSS and PIRLS 2011 represent the first time the two assessments have been conducted concurrently.

For further information and to download the full reports, summaries and multimedia visit < www.acer.edu.au/timss >

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