

REVOLUTION SCHOOL

Summary of Survey and Research

Australians get fail mark on what works to improve schools

A significant number of Australians wrongly believe that smaller class sizes, compulsory homework and private schooling all lead to better academic results for students.

A national survey has found serious misconceptions about the most effective ways to raise Australian academic standards, which have fallen significantly in international rankings over the past decade.

The survey was conducted in conjunction with the landmark four-part ABC series, Making the Grade, which follows a year in the life of Kambrya College, a state secondary school in Melbourne's outer south-eastern suburb of Berwick.

In 2008 Kambrya's Year 12 results put it in the bottom ten per cent of secondary schools in Victoria. Making the Grade follows the transformation of the school under the leadership of principal Michael Muscat, to the point where it is in the top 25% of schools.

Muscat and his colleagues manage more than 1000 students, including those struggling to cope with school and home life. Making the Grade gives a raw and honest insight into the challenges facing these teenagers, while also showcasing what really works in classrooms to improve academic results.

The series highlights the internationally renowned research of Professor John Hattie, and one of the world's top ranked education institutions, the University of Melbourne's Graduate School of Education.

During 20 years of research analysing more than 70,000 studies involving a third of a billion students from around the world, Professor Hattie has established what is most effective to improve student learning.

He has found that teaching which involves goal-oriented, specific feedback to students, and positive teacher-student interaction, have the most impact on learning growth.

Contrary to what the survey has revealed many Australians believe, Hattie's research has established that smaller class sizes, state-of-the-art facilities and hours of homework have little or no impact on results.

"Reducing class size does enhance achievement, however, the magnitude of that effect is tiny," says Professor Hattie. "And the reason that it's so small is because teachers don't change how they teach when they go from a class of thirty to fifteen."

The national survey found more than three quarters of Australians incorrectly think smaller class sizes have a positive impact on academic achievement. Less than 10% of people got this right.

Australians had other misconceptions:

- Fifty two percent believe wearing a school uniform has a positive impact on students' results, but Hattie's research has found it has no impact at all
- When asked if the academic achievement of secondary school students was better at single sex schools compared to co-ed schools, only a third correctly answered that it was not
- More than two thirds of Australians incorrectly think that regular homework is essential for students to succeed at secondary school
- When asked if the standard of teaching in private schools promoted greater academic growth among students compared to teaching in government schools, 43% wrongly answered yes
- Only 34% correctly answered that there was no difference between private and public schools in terms of student's academic growth
- Nearly a third of Australians under-estimate the number of hours teachers work each week.

The survey also found two thirds of people think teaching is a worthy profession but ranked teachers behind doctors, lawyers, university lecturers, elite athletes and nurses in terms of perceived status in our society.

More than two thirds of people think schools should place more emphasis on literacy and numeracy, but only 13% strongly agree that Australia should push secondary students harder to outperform Asian countries.

HOW BAD IS AUSTRALIA'S EDUCATION SYSTEM? THE FACTS ...

"By 2025, Australia will be ranked as a top five country in the world for the performance of our students in reading, science and mathematics literacy and for providing our children with a high-quality and high-equity education system".

Australian Government target - 2012

- Education experts believe evidence from recent international testing shows current policies and teaching practices will not allow Australia to meet the above target.
- Dr Sue Thomson from the Australian Council for Educational Research (ACER) oversees the OECD Program for International Student Assessment (PISA) testing in Australia. In her 2013 report on the testing, which included 510,000 students from 65 countries, Thomson says results for Australian 15-year-olds are sliding against other nations.
- Australia's high performing students in particular are not keeping pace with international counterparts, indicating teachers are not extending the brightest students. The proportion of students with the highest levels of maths proficiency shrank from 19.8 per cent in PISA 2003 to 14.8 per cent in PISA 2012.
- Since 2003, Australia has recorded one of the largest declines in maths results amongst OECD countries, from ranking 6th to 17th.

- Between 2009 and 2012, Australian 15-year-olds fell from 9th to 13th in reading, and 10th to 16th in science.
- Based on the PISA data, the Melbourne Graduate School of Education (MGSE) estimates the average Australian student is one year behind the top performing nations in reading and science, and two years behind in mathematics.
- The PIRLS (Progress in International Reading Literacy Study) report showed in Year 4 reading, Australia was outperformed by 21 countries.
- One quarter of Australian Year 4 students did not meet the intermediate standard of reading proficiency, the minimum standard expected.
- PIRLS showed only 10 per cent of Australian Year 4 students are reading at the advanced level, compared to around 18 per cent in top-performing countries.
- The TIMMS (Trends in International Mathematics and Science Study) showed Australian Year 4 students were outperformed by 17 nations in maths and 30% of students did not meet the minimum standard.
- Australia was outperformed by 18 countries in science among Year 4 students.
- ACER chief executive Professor Geoff Masters said the results make it “difficult to see how Australia will be in the top five countries by 2025 if we continue on our current path. We’re staying where we are and others are moving ahead.”
- Melbourne Graduate School of Education Dean, Professor Field Rickards, says: “Given the performance of our current cohort of Year 4 students in reading, mathematics and science, Australia is unlikely to address its declining performance among 15 year olds in coming years. Furthermore, our most able students not achieving their potential is particularly concerning for the country’s future prosperity.”

WHY ARE AUSTRALIAN STUDENTS SLIDING?

Australia has shortages of teachers qualified in mathematics, science, technology, languages and English, while there is an over-supply of graduate primary and secondary humanities teachers.

- The PISA study found around 30 per cent of Australian 15 year old students were taught by unqualified mathematics teachers. This was much higher than the international average.
- 24 per cent of 15-year-olds were taught by unqualified science teachers. The OECD average of each was 18 per cent.
- The vast majority of Australian Year 4 students (84%) were being taught science by teachers who had no specialisation or major in the subject
- In comparison to the international average, very few primary teachers have a science background.
- The end result is that a significant number of Australian students are choosing not to study maths and the most challenging science subjects at the higher secondary level.

“So many kids have horror stories about their maths teacher in Year 8 or 9,” says Dr Sue Thomson. “When schools don’t have enough qualified maths teachers, they put those they do have in the senior secondary classes.

“But the problem then is that kids in the earlier years of high school are getting teachers who are not qualified in maths and don’t have the depth of knowledge to explain things in a number of different ways so students understand, and that’s when kids switch off.

“It’s the same with science. If teachers are just teaching by the book because their knowledge is not very much more advanced than the kids, then the students drop out of those subjects.

“Having enough suitably qualified teachers is critical in terms of overall student achievement,” Dr Thomson says.

The PISA and TIMSS reports by Thomson and her team at ACER are widely recognised as world-class. She, along with a plethora of other education experts, believe one answer to the problem lies in more rigorous, specialised and professional teacher training, particularly in areas such as science and maths. However, this is a challenge...

The entrance mark required for tertiary teaching courses has fallen, and students are accepted into some courses with an ATAR (Australian Tertiary Admission Rank) below 50%

Last year, Professor Ed Byrne, Vice Chancellor of Melbourne's Monash University, wrote: "Why shouldn't the teaching profession be more like other professions? There would be public outrage if future doctors were being admitted to university with ATARs of 40, so why accept this of teachers? Surely future generations of Australian children deserve better. Teachers are important. They deserve to be respected and valued. Higher admissions standards - alongside other improvements in teacher education - would be a powerful means of fostering that respect. Do we want our children to be taught by the best and most capable teachers? Do we want to make better schools a reality? If the answer to both these questions is yes, the current trend has to be reversed," Professor Byrne wrote.

- More than 3% of offers for education places in Australia in 2013 went to applicants with ATARs below 50. Teaching was the least popular course choice overall for high-achieving students, but our demand-driven system means it is a popular option for low-achieving students.
- In Australia, more than half of all year 12 leavers who are offered a place to study a Bachelor of Education have an ATAR below 70 – it was 52 per cent in 2012, compared with 45 per cent in 2009.

The Business Council of Australia has also expressed its concern about this trend: "The increasing number of students entering teacher education courses with ATARs below 60 is a potential concern, particularly if their level of schooling in areas they are expected to teach, such as maths and science, is inadequate. One possible solution would be to move teacher education to a postgraduate level."

The Gonski report also stressed the importance of good teaching. The Gonski Review of Funding for Schooling report (2011) stated that "excellence in teaching, in all schools and at all levels of schooling, is by far the single most important factor in achieving sustained improvements in the performance of Australia's schooling system."

Australia's education policy has been distracted by side issues instead of focusing on improving the quality of teaching ...

Dean of the Melbourne Graduate School of Education Professor Field Rickards believes Australia has been side-tracked in recent years by issues such as greater school autonomy, more school choice and

smaller class sizes, but research has shown those things don't have a huge impact on students' learning and progress.

"Why don't class sizes matter? Because if you teach a class of 35 kids the same way that you teach a class of 15 kids, then the end result is the same. There are many teachers delivering the same message that they were 20 years ago, not using all the new evidence available about how humans learn.

"Countries with top performing education systems employ a very different mix of policies than those currently implemented in Australia. Quality teaching is their platform for success. Too many of Australia's education policies are devoted to matters that ultimately have little impact on student learning."

The MGSE argues that Australia has to focus on what research has shown to have the most powerful effect on student outcomes – quality teaching that uses a 'clinical' approach to accurately assess where students are at, then employs evidence-based strategies to intervene, give feedback, and help every child improve and progress - no matter their level.

Mythbusters

Too many of Australia's education policies have been devoted to debates that ultimately have little impact on student learning ...

Myth:

Teaching at private schools is better than teaching at public schools

Reality:

Evidence from Professor John Hattie's research which has looked at almost 80,000 studies involving nearly one third of a billion students worldwide ...

"When it comes down to the quality of teachers, its very, very hard to find evidence that there is any major difference between the public and the private schools in terms of the growth, the value that teachers add.

In fact it's almost a myth to believe they're that different. You get some of the best teachers in Australia in some of our poorest school areas."

What really matters is good leadership within a school, and how teachers are selected and developed, no matter whether it is private or government.

Myth:

How much you spend on your child education equates to how well they will do at school.

Reality:

Evidence shows that it is the quality of teaching that matters most. Parents can choose schools, and choose to pay private school fees, but they can't choose their child's teachers. There is no linear relationship between what you might spend on a child and the education outcome for the child.

Myth:

Homework is a necessary evil

Reality:

Hattie's meta-analysis has shown that the amount of homework a student does in primary school has no effect on student achievement or progress.

He is not saying that there should be no homework, but if schools are going to set homework (which many parents expect) then the focus should be on the type of homework given.

For example, children at primary level should be given fewer projects but could instead be set short activities to reinforce what they learnt that day.

Homework does have more effect on results for secondary school children, but generally students are given too much. A short time spent practicing what was taught that day can have the same effect as one or two hours of study.

John Hattie says he rarely enforced his own four children doing homework, saying it was what happened in the classroom that mattered.

“Homework in primary school has an effect of around zero. In high school it’s larger... Which is why we need to get it right. Not why we need to get rid of it ... If you try and get rid of homework in primary schools many parents judge the quality of the school by the presence of homework. So, don’t get rid of it. Treat the zero as saying, “It’s probably not making much of a difference but let’s improve it”. Certainly I think we get over obsessed with homework. Five to ten minutes has the same effect of one hour to two hours. The worst thing you can do with homework is give kids projects. The best thing you can do is to reinforce something you’ve already learnt.”

Myth:

Reducing class size leads to better outcomes for students

Reality:

Reducing class size can enhance student achievement but generally the effect is only marginal. What really matters is that the teacher is effective and having an impact, no matter what size the class is.

Hattie: “Well, the first thing is, reducing class size does enhance achievement. However, the magnitude of that effect is tiny. It’s about a 105th out of 130-odd effects out there and it’s just one of those enigmas, and the only question to ask is, ‘Why is that effect so small?’ And the reason, we’ve found out, that it’s so small is because teachers don’t change how they teach when they go from a class of thirty to fifteen.”

Myth:

We should be happy if our children are ‘doing their best’

Reality:

Some of the most effective learning happens when teachers ask students what they predict their results will be before a test, and then pushes them to exceed those.

Hattie says a successful teacher establishes a student's expectations of their own abilities, but then intervenes and makes them believe they can do better.

Myth:

Teachers should be experts on their subject who do most of the talking in class

Reality:

Most teachers talk between 80 and 90 per cent of the time during a lesson. The research of Hattie has shown that students are more engaged and learn more when teachers talk around 50% of the time, or less.

Evidence shows that children can learn very effectively from their peers, when another student explains concepts to them.

The best teachers encourage their students to be active and engaged in the classroom, exploring ideas, and not just passively listening.