CAN NEUROSCIENCE IMPROVE THE WAY STUDENTS LEARN?

If all students in a class don’t get the same mark, the differences can’t all be due to curriculum or teaching. They’re more to do with how students learn. US special forces are now using accelerated learning techniques to learn a language in just six weeks. What clues does this give to the future of learning?

See the centre double page feature on Educating with Neuroscience starting page 36

GONSKI 2.0

WHAT WILL IT MEAN FOR YOUR SCHOOL?

SPEECH PATHOLOGY

STUDENT ENGAGEMENT & LEARNING p17

EDUTECH 2017

PROFESSIONAL DEVELOPMENT p30

3D PRINTING

STEM p58

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Gonski 2.0: Delivering needs-based funding

EMMA DAVIES

PRIME Minister Malcolm Turnbull’s Gonski 2.0 scheme will increase school funding over the next decade and attempt to move past decades of funding wars and political impasse.

Under the new Quality Schools Initiative, total Federal funding for private and public schools will rise from $17.5 billion this year, to $22.1 billion by 2021 and $30.6 billion by 2027.

9000 schools nationwide will be better off, while 350 will have slower funding growth than they expected and 24 of the nations’ wealthiest will have funding cut from next year.

The Commonwealth will provide 20 per cent of public school funding, up from the current 17 per cent.

This will end the 27 different school funding agreements the Coalition inherited from Labor, replacing them with national needs-based funding across Government and non-Government schools.

The Gonski report in 2011 saw the previous Labour Government adopt the needs based funding model, but separate deals with different States and Territories and school sectors meant there was no nationally consistent approach.

The model provides additional support for students from low socio-economic backgrounds, those with disabilities, those who come from non-English speaking backgrounds, and smaller rural and regional remote schools.

In a press conference with minister for Education and Training Simon Birmingham, Mr Turnbull said the reforms would ensure funding was needs-based and fair across the board.

“Every school will receive Commonwealth funding on a genuine needs basis consistently across Australia, as David Gonski recommended in his report six years ago,” Mr Turnbull said.

“We will ensure that all schools and States transition to an equitable funding model within a decade.

“It will ensure that the same student with the same needs will be treated exactly the same in terms of Commonwealth funding, no matter which State they reside in or the school system in which they’re being educated,” he said.

David Gonski will be providing high level advice to the Government on how the extra funding should be used by Australian schools to improve their performance and student outcomes.

“I am very honoured to be asked to chair another report, whether you call it Gonski 2.0 or whatever, and I look forward to it because I believe that we can do good things with the additional money, and I’m very pleased that there is substantial additional money, even over indexation and in the foreseeable future,” said Mr Gonski.

Mr Gonski will be chairing an independent panel that will draw on the expertise of teachers, education experts and academics with a final report expected in November, ahead of the negotiation of new school reform agreements with States and Territories in the first half of 2018.

The 10 year transition period is aimed to give schools the time to adjust.

The schools furthest behind will receive the fastest funding increase as the Government moves towards consistently funding 20 per cent of the schooling resource standard for Government schools and 80 per cent for non-Government schools.

Indexation will initially grow faster than real costs to give education authorities certainty, with the Government honouring its 2016 budget commitment to grow the funding standard at 3.56 per cent from 2018 to 2020. From 2021, a floating indexation rate will be applied to the funding standard to ensure that funding reflects real changes in costs and stays in line with the economy.

Funding will also take in to account enrolment growth, which is consistent with arrangements for Government schools.

States and Territories can then make their own funding decisions about whether they want their schools to reach the Schooling Resource Standard.

“Every school will receive Commonwealth funding on a genuine needs basis consistently across Australia, as David Gonski recommended in his report six years ago.”

(continued on page 4)
Ms Cronin said there remained a high degree of uncertainty about the full impact on funding for Catholic systems over the next decade.

The NCEC is calling on the Minister to expedite the release of the Department of Education and Training’s modelling and to listen carefully to the additional concerns of Catholic education,” she said.

In an interview with Sky News, Mr Birmingham said the Catholic School Sector was in a good position that would see, over that four year period, an extra $1.2 billion go into Catholic Schools around the country.

“The idea that there’s a threat to small parish schools as I’ve seen reported in some instances is quite ridiculous,” he said.

“In fact again, quite the opposite, because it’s a needs-based model, and if there are small parish schools operating in regional communities, they’ll receive regional loadings. If they’ve got low socioeconomic students or Indigenous students, they’ll receive loadings for those low SES or Indigenous students, that’s the point of a needs-based model.”

The Federal Government has since released an online calculator, the School Funding Estimator, which reveals approximately how much money schools will receive under the new funding plan.

Lifting teaching standards to improve results

ELIZABETH FABRI

AUSTRALIAN primary school teachers have a lot to learn from high-performing school systems overseas, according to a new report by national research and policy institute Learning First.

The Australia’s primary challenge: how to lift teacher quality in early school years, report compared Australian education standards to those in Finland, Japan, Hong Kong and Shanghai, and outlined ways the country’s system could improve to boost results.

“Initial teacher education programs in Australia are not consistently selective so are not trusted as putting up a high barrier to entry to the profession.”

It said new literacy and numeracy tests, were still entering the classroom. About 300 slightly over-funded, especially New South Wales, Victoria and Queensland

Comparing to the Labor proposal, most schools, sectors and states will feel like losers. But taxpayers are big winners. Grattan Institute analysis shows that for its government schools.

The report found academic performance, particularly in the early years, was heavily influenced by a teacher’s deep understanding of the content as well as pedagogical knowledge on how to effectively teach the subject.

“The report found academic performance, particularly in the early years, was heavily influenced by a teacher’s deep understanding of the content as well as pedagogical knowledge on how to effectively teach the subject.

Lifting teaching standards to improve results

BY PETER GOSS, GRATTON INSTITUTE, SCHOOL EDUCATION PROGRAM DIRECTOR — From theconversation.com

Gonski 2.0: Winners and Losers

Western Australia, which receives much less from the Commonwealth for its government schools

Underfunded independent schools (especially the lower-fee schools, some of which are the most underfunded schools in the entire country)

• Government schools in states that are currently underfunded, especially New South Wales, Victoria and Queensland

• Catholic schools, which will lose a number of special deals (especially for the Australian Capital Territory which had a special deal all of its own); more analysis is needed to understand whether they will be worse off overall

24 highly over-funded schools that will lose their per-student funding cut

About 300 slightly over-funded schools that will have their funding slowed or frozen. It is not entirely clear who these schools are at this stage.

Learning First said for teaching standards to improve educators must have a deep content knowledge and pedagogical knowledge.

“Acquiring both forms of knowledge is more important and more difficult than many people realise,” it said. Learning First said issues stemmed from “unselective” teacher programs in Australia and the “generally not strong” science, literacy and maths expertise of prospective primary teachers.

“One way for systems to improve teacher subject expertise is to assess candidates and select only those prepared with the greatest knowledge,” it said.

“Initial teacher education programs in Australia are not consistently selective so are not trusted as putting up a high barrier to entry to the profession.”

It said new literacy and numeracy tests for teacher candidates had recently been introduced as a way to raise the bar, setting minimum standards for teachers to ensure the least knowledgeable candidates weren’t in classrooms.

“This is important, yet the minimum standards approach may have two problems: it does not create incentives for development past minimum standards, and it does not provide differentiating information to the system on teacher candidate quality (aside from binary pass or fail data),” it said.

Early reports however showed that about 5 per cent of teacher candidates who failed these tests, were still entering the classroom with provisional registrations.

It said one strategy that united the four international systems was the opportunity for teachers to develop a deep knowledge in just one or a few subjects.

Attraction to the profession was also a factor, raising the question if teaching was more competitive with higher university entrance scores and better salaries, would it draw in higher quality candidates.

“Major structural changes to how initial teacher education providers are funded and regulated would be necessary in order to create uniformly high admissions requirements in Australia’s relatively deregulated systems of initial teacher education,” it said.
Bringing projects to life

KONICA Minolta is a market leading provider of integrated print hardware, software and solutions. 3D printing is fast becoming an invaluable skill with the growing importance of science, technology, engineering and mathematics (STEM) subjects in schools.

The radical new benefits of 3D printing include: speed, cost-effective fabrication of physical models, prototypes and finished products, as well as the ability to design complex geometries with an ever increasing variety of materials.

Not only does the technology enhance existing school learning material, it helps shape the student learning experience with visually rich model creation.

"Being able to print their visions in full colour 3D has brought the project to life for the students," Marist College Ashgrove ITD coordinator and Montagne Residence worker, TAS Education and Training minister Jeremy Rockliff said it was part of a long term plan for education in the island State. "Supporting the health and wellbeing needs of students, these specialists will work with students who might not otherwise reach their full potential at school, which in turn improves their future employment prospects," Mr Rockliff said.

"Education is, and will always be, a priority of this Government. By getting the Budget back into balance we are able to continue to invest in the most significant improvements to our education system in decades. "This announcement builds on our record education funding which includes funding the ‘full Gonski’, the additional literacy and numeracy specialist teachers we added to schools in our first year in Government, and the improvements we are making to keep students at school longer such as by extending high schools to Year 12."

More support staff for schools

THE Tasmanian Government has committed $6.9 million over four years to provide extra support staff to primary and secondary schools in the State.

This funding will be made up of an additional 14.8 full-time employed professional support staff employed across Government schools; including speech pathologists, psychologists and social workers.

The radical new benefits of 3D printing include: speed, cost-effective fabrication of physical models, prototypes and finished products, as well as the ability to design complex geometries with an ever increasing variety of materials.

Not only does the technology enhance existing school learning material, it helps shape the student learning experience with visually rich model creation.

"Being able to print their visions in full colour 3D has brought the project to life for the students," Marist College Ashgrove ITD coordinator and Montagne Residence senior supervisor Andrew Devoy said. "This is the next generation of manufacturers, designers, and engineers, so we're giving them the best possible start. "It lets teachers deliver information in a new way, transforming learning outcomes. "This more than adequately bridges the gap between secondary and tertiary education.

Konica Minolta has a support centric infrastructure and offers tailored solutions for teachers and educators to adopt 3D printing projects, with advanced servicing, logistics, training and financing options.

3D printing in education is a vehicle for building the next generation of designers, builders and innovators of tomorrow.

Konica Minolta technology ensures classrooms remain at the forefront of 3D printing.

More information can be found at: www.konicaminolta.com.au

IN BRIEF

Canberra partners with China

THE ACT Board of Senior Secondary Studies has joined forces with the Australian Curriculum Centre and Shanghai Jiao Tong University education group to offer ACT secondary curriculum courses in Shanghai, China.

The partnership would allow international students to qualify for the ACT Senior Secondary Certificate, gain an ATAR score and have access to the Territory’s tertiary institutions.

$200m boost for Tas schools

FEDERAL Government funding under the new Gonski 2.0 package will deliver an additional $200 million for Tasmanian Government schools over the next 10 years.

The news was welcomed by Tasmania Education minister Jeremy Rockliff who said the funding would provide greater certainty for the State.

"This is real money – costed and funded," Mr Rockliff said.

TAS Education and Training minister Jeremy Rockliff said it was part of a long term plan for education in the island State. "Supporting the health and wellbeing needs of students, these specialists will work with students who might not otherwise reach their full potential at school, which in turn improves their future employment prospects," Mr Rockliff said.

"Education is, and will always be, a priority of this Government. By getting the Budget back into balance we are able to continue to invest in the most significant improvements to our education system in decades. "This announcement builds on our record education funding which includes funding the ‘full Gonski’, the additional literacy and numeracy specialist teachers we added to schools in our first year in Government, and the improvements we are making to keep students at school longer such as by extending high schools to Year 12."

"EDUCATION IS, AND WILL ALWAYS BE, A PRIORITY OF THIS GOVERNMENT."
**IN BRIEF**

**Music education gets backing**

VIC

The Victorian State Government has opened the second round of applications for its $400,000 Musical Instruments program to help schools purchase new musical instruments. The second round would provide 200 Government, Catholic and Independent primary schools with grants of up to $5000 to help strengthen their music programs.

"Research tells us that exposure to music and musical education results in better results and better attendance," Education minister James Merlino said.

"Last year 43 schools purchased musical instruments. "They can also be affected by students choosing Government schools outside their designated schools, where there are places available. "Enrolment pressure is particularly occurring at schools with better reputations."

*In response to the challenging situation, the Department recently developed a School Assets Strategic Plan to address ways the State could house an increase in student population up to 2031. "This is the first such plan for the Department. It is a good plan – it covers the issues we would expect and has benefited from expert input and independent validation of assumptions, proposed solutions, and the likely costs," it stated."

The findings came at a time when student numbers were expected to rise more significantly than the Department has been receiving to date," it said.

"Further savings beyond those already identified would be possible through changing operational policies on matters such as class sizes, operating hours, and single-sex, selective, sports and performing arts schools."

It recommended the Department look at increasing maximum class sizes, introducing double-shift and staggered shifts in some schools, converting single-sex schools into co-educational, and converting selective schools into comprehensive schools with selective streams. "A sensitivity analysis prepared for the Department shows that increasing the maximum class size by one student could reduce the funding gap significantly," it said.

The report also found there were currently 242 empty classrooms in 19 boys-only high schools, 155 empty in 24 girls high schools, 242 empty classrooms in 19 boys-only high schools, 155 empty in 24 girls high schools, and 230 empty in 15 specialist schools which could be utilised.

**High rise school for inner Sydney**

NSW

A new 47 classroom high-rise secondary school being built in inner Sydney will provide places for 1200 students. Scheduled to open in 2020, the yet-to-be-named high school on the corner of Cleveland and Chalmers streets in Surry Hills will replace Cleveland Street Intensive English High School, which would move to a purpose-built school in Alexandria next year.

The school will be designed by Francis-Jones Morehen Thorp and was expected to comprise open and informal learning areas, practical activities areas, seminar and presentation spaces, along with an outdoor games court and gymnasium.

**Digital education boost**

VIC

Regional schools in Victoria will receive $16.4 million in funding to improve digital connectivity and bandwidth as part of the Victorian 2017/18 budget.

The expenditure, which also coincided with the State Government’s $67.9 million spend towards better IT support for all schools in the State, would ensure students outside the cities weren’t left behind.

"We are doubling the bandwidth provision to 347 small rural and regional schools across Victoria to make sure all students can access a first-rate digital education regardless of where they live," Education minister James Merlino said.

"By investing in digital connectivity for rural and regional schools we can ensure our teachers can offer the same standard of digital education as metropolitan schools."

**Student growth prompts action**

**ELIZABETH FABRI**

Student numbers are expected to rise by 21 per cent in NSW schools over the next 15 years to almost 1.5 million, prompting an independent review into the State school planning process.

On 4 May, the NSW Audit Office acting auditor general lan Goodwin released a series of recommendations to ensure Department of Education funding was best spent to accommodate an increase in numbers, particularly in Sydney.

"Improving education outcomes of students is a State priority," the Planning for School Infrastructure report stated.

"For much of the last decade, there has been chronic under-investment in NSW government school infrastructure and deficiencies in asset planning."

"Many schools have more students than can be accommodated in existing classrooms, and demountables are widely used for extended periods."

In response to the challenging situation, the Department recently developed a School Assets Strategic Plan to address ways the State could house an increase in student population up to 2031.

"This is the first such plan for the Department. It is a good plan – it covers the issues we would expect and has benefited from expert input and independent validation of assumptions, proposed solutions, and the likely costs," it stated.

The Department plan set out a number of initiatives, which included increasing the maximum number of students in new and redeveloped schools; changing and enforcing school catchments; increasing partnerships with the private sector; better recycling of school assets to deliver better facilities; and moving towards planning on a cluster basis, rather than school-by-school basis.

However, Mr Goodwin’s report stated additional funding would be needed to achieve the Department’s goals.

"Even with these reforms, the estimated cost of infrastructure needed up to 2031 is significantly more than the Department has been receiving to date," it said.

"Further savings beyond those already identified would be possible through changing operational policies on matters such as class sizes, operating hours, and single-sex, selective, sports and performing arts schools."

It recommended the Department look at increasing maximum class sizes, introducing double-shift and staggered shifts in some schools, converting single-sex schools into co-educational, and converting selective schools into comprehensive schools with selective streams.

"A sensitivity analysis prepared for the Department shows that increasing the maximum class size by one student could reduce the funding gap significantly," it said.

The report also found there were currently 242 empty classrooms in 19 boys-only high schools, 155 empty in 24 girls high schools, 164 empty in 21 selective high schools and 153 empty in 15 specialist schools which could be utilised.

**Push for students to attend local schools**

**ELIZABETH FABRI**

More than half of Victorian parents are sending their children to schools outside their local catchment in favour of more ‘popular’ schools, according to latest figures released by the Victorian auditor general.

"Currently, 52.3 per cent of Government primary school enrolments and 53.3 per cent of Government secondary school enrolments come from outside the local school catchment," the report stated.

"The findings came at a time when school infrastructure planning was at a crucial point, with 50 more State schools needed by 2021 alone to accommodate a 10 per cent rise in student numbers of 90,000 students."

"Enrolments at individual schools change over time, principally due to population growth," it said.

"They can also be affected by students choosing Government schools outside their designated schools, where there are places available. "Enrolment pressure is particularly occurring at schools with better reputations."

The auditor recommended the Department increase the number of buildings at schools to allow for rising enrolments; adjust local catchment zoning; and shift its attention to less popular schools to help them attract more enrolments.

"As enrolment demand may fluctuate over time, DET’s asset choices need to be flexible, so that buildings can be relocated where and when they are required," it said.

"DET has effectively used its stock of relocatable buildings to respond to changing enrolment demand and the need for assets. "Relocatable buildings can be removed when they are no longer needed at a school, and then refurbished and reassigned to another school."

"DET annually considers the individual asset needs of schools to accommodate changes in enrolments.**
Reduce bullying and track improvements

According to the Australian Covert Bullying Prevalence Study, one in four Australian children in years 4 to 9 are frequently bullied. Bullying interferes with students learning and contributes to a negative culture at school. To reduce or even stop it happening altogether, a comprehensive anti-bullying program is needed.

This requires school staff with the will and persistence to implement change, a plan of action, a bullying incident trend tracking tool to measure improvements, and resources such as anti-bullying lessons to teach students how to identify and respond to bullying incidents.

There should be an emphasis on teaching bullies that their behaviour is unacceptable; teaching victims how to best respond; and teach bystanders, the bully’s supporters, and victim’s defenders, to develop positive attitudes, behaviours and strategies.

To change a bullying culture, all teachers need to be involved in anti-bullying initiatives so that they can reinforce the messages and lessons that students learn.

By building the social/emotional intelligence of the school population, the impact and instances of bullying can be reduced and teachers can focus on quality teaching.

With LearnFast’s Cool School anti-bullying trend tracker, schools don’t have to develop their own bullying prevention program from scratch.

The tracker resources include a six-week curriculum of interactive lessons and teacher-led activities.

Cool School provides a safe, anonymous way for students to report bullying incidents and sends reports to track bullying reduction trends, enabling schools to measure improvement term by term.

For more information about the Cool School anti-bullying trend tracker visit www.learnfastforschools.com.au/programs-cool-school
Labor delivers TAFE fee freeze

WA

THE newly appointed McGowan Government has delivered on its pre-election promise of freezing TAFE fees for WA students.

Under the former Liberal Government, TAFE fees had increased by 510 per cent resulting in a 24.5 per cent drop in enrolments between 2013 and 2016. The TAFE freeze would mean no further increases to fees in the State Government's first term, and was estimated cost about $11.8 million over four years.

“The huge increases in fees have prevented young Western Australians from getting the training they need to enter the workforce,” WA Premier Mark McGowan said.

“We recognise the importance of TAFE in preparing young Western Australians for the best possible start to their working lives.”

Year 12 retention rates up

SA

A record number of public school students over the past decade are finishing Year 12, latest figures from the Department of Education South Australia have found.

In 2016, the retention rate climbed to 104.6 per cent compared to 74.5 per cent in 2007, with the Department’s SACE improvement program believed to be a key contributor.

“The figures demonstrate the incredible work our schools are doing to keep students engaged,” Partnerships, Schools and Preschools executive director Anne Millard said.

“By closely monitoring and tracking every student who is doing their SACE, schools have a good sense of where student achievement sits and can identify if and when they need to intervene and provide greater support.”

Investing in STEM education

WA

THE Department of Education WA has partnered with the STEM Education Consortium in a three year program aimed at improving STEM education in schools.

The $4 million project encouraged students to find solutions to real-world problems through establishing new resources for classrooms, and professional learning for teachers through face-to-face workshops, online and video conferencing, and on-demand digital channels.

Examples of projects included programmable robots for use in emergency situations.

“An investment in STEM disciplines will support the diversification of the economy and is an investment in jobs of the future,” WA Education and Training minister Sue Ellery said.

No more power bills in SA

ELIZABETH FABRI

SOUTH Australian schools will have more funding to put towards educational resources from July when the State Government begins footing water, electricity and gas bills for its 900 public schools and pre-schools.

The Government previously contributed partial power bill funding, with State schools coming up with the remaining funds.

Announced in May, the new funding was a welcome relief in a State which has struggled with rising energy prices over the last few years.

“From July, the payment of utilities will be fully funded and managed centrally,” South Australia Education and Child Development minister Susan Close said.

“This means schools will be able to use funds previously needed to pay the gap in their utilities bills, for education purposes instead.”

The State Government also recently announced a $15 million investment to reduce power bills by providing 40 schools with $250,000 grants for solar panels.

“An additional 200 schools will receive $25,000 to replace inefficient lighting, such as fluorescent tubes, and install lighting sensors and timers,” Ms Close said.

“Since 2002-03 and including the 2016-17 Budget, we have invested more than $2.2 billion in school capital works, maintenance and asset funding.”

Australian Education Union president Howard Spreadsbury said the union strongly supported the State Governments decision.

“This delivers on what principals, teachers and governing councils have been calling on for some time,” Mr Spreadsbury said.

“This will mean that schools spend more funding in the classroom which is good news for students and staff.”

Perth Modern school plan

EMMA DAVIES

PERTH Modern School board has proposed the construction of a new public school alongside the historic Subiaco historic site in a bid to keep its academically select students from being moved to a new CBD high school.

Under the new State Government’s Education Central Plan, the schools brightest pupils would be relocated to a new multi-storey school in Northbridge by 2020.

Perth Modern would then be reopened to local students.

Mark McGowan’s election promise was to establish the Perth Academic College, replacing the academically select school currently operating at Perth Modern.

The vertical high school will be custom designed, with the CBD site provide opportunities to take advantage of the existing transport hub around the Perth Train Station, and includes Memorandums of Understanding with a range of existing facilities including the State Theatre Centre, the Art Gallery of WA and the State Library.

The new 17,000sqm Academic College will be include the latest technology and equipment for gifted students.

However, the board’s alternative proposal has the backing of the school’s P&O and the Perth Modernian Society.

Perth Modern Society President Peter Farr said in a statement that despite genuine concerns expressed from students, parents, the school board, school administration and the general public, the education central plan is going ahead.

Mr Farr said it was amazing that Minister for Education Sue Ellery had not held a meeting with key stakeholders on the proposal, and seemed to have assumed that a forklift transfer of students would work out fine.

“The public can, in May, expect to see more vocal opposition led by the Save Perth Modern Action Group,” he said.

The board’s proposal would result in a new local-entry 7800sqm school being built next to Perth Modern.

Minister Ellery responded to the Perth Modern School Board’s proposal, saying that the State Government would be making an announcement about how the Education Central Plan will progress in the coming weeks.

Historic Perth Modern School Buildings.
Parents prosecuted over attendance

ELIZABETH FABI

NORTHERN Territory parents that fail to ensure their children attend school regularly are facing prosecution under the Education Act.

Recent figures from the Department of Education found that there have been 41 cases against parents and carers since 2014; 30 have been finalised in court and 11 were yet to be completed.

“All cases are investigated individually to determine whether prosecution is suitable,” a Department spokesperson said.

“The Department of Education works with families to identify barriers for non-attendance and implement strategies for re-engagement.

“This work is supported by the Australian Government’s Remote School Attendance Strategy, the School Enrolment and Attendance Measure and the Northern Territory Government’s Every Day Counts Strategy.”

Under this strategy, the department has attendance and truancy officers based in regional centres that conduct regular patrols in public places and communities to ensure children are attending school.

However, latest department figures show absenteeism to still be a significant issue, with low attendance rates across a large number of schools.

In Term 4 2016, 67 out of 151 Territory schools had an attendance rate of less than 70 per cent, while 20 schools had an attendance rate of less than 50 per cent.

From a regional perspective, Amhem recorded the lowest total attendance rate of 54.6 per cent, while Darwin recorded the highest at 87.8 per cent.

Image: Stock.

The department said only when there was a "continued non-attendance" of a student, with no reasonable excuse parents would be referred for prosecution in court.

“Following the prosecutions process, the Department of Education has sighted success with some families,” the spokesperson said.

“For example, one student has gone from 42 per cent attendance to 90 per cent attendance and another from 49 per cent attendance to 88 per cent attendance.”

Reading challenge launched

QLD

THE Queensland Government has launched its 12th annual Premier’s Reading Challenge aimed at improving student literacy in schools across the State.

Held from 15 May to 25 August, the 2017 challenge encouraged Pre Primary through to Year 9 students to read a minimum number of books in the specified timeframe.

Reducing school costs with solar

QLD

THE Queensland Department of Education and Training is seeking ideas from the energy industry to reduce State school energy costs using solar and energy efficiency measures.

Queensland schools are among the State Government’s largest energy consumers, spending about $57 million each year.

More than 1200 out of 1239 State schools are already offsetting energy costs with solar photo-voltaic (PV) systems.

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THE Safe Schools Coalition Australia is a national network of organisations working with schools to create more inclusive environments for same sex attracted, intersex, and gender diverse students, staff and families. The Coalition offers support in the form of the voluntary Safe Schools Program and free online resources for schools. Program supporters include the Australian Secondary Principals Association (ASPA), Australian Council of State School Organisations (ACSSO) and the Australian Education Union (AEU). 127 schools are members of the Safe Schools Coalition, with the option to implement the program and resources as it suits the schools context and needs.

Federal funding for the program is due to run out in June this year, with NSW and Tasmania replacing the controversial program in favour of a broader anti-bullying strategy. WA’s new Labor Government has promised to continue to fund the program to guarantee Safe Schools can operate in any public secondary school in the State.

The program was based on research from the Bully Zero Australia Foundation, which found that 61 per cent of same sex attracted or gender diverse young people experienced verbal abuse, 18 per cent experience physical abuse, and that 80 per cent of these homophobic and transphobic incidents took place in schools.

University of Sydney Education, Pedagogy and Sexuality lecturer Victoria Rawlings says that transgender young people are exceptionally over-represented in statistics relating to self-harm, attempted suicide and suicide.

“School environments are often saturated with moments of gendered violence including homophobia, transphobia and misogyny. As transgender young people are forced to negotiate these environments, it’s not hard to imagine how difficult occupying these spaces must be, and how alone many of them may feel,” Dr Rawlings said.

“While not all transgender young people will self-harm, creating inclusive and welcoming school environments where homophobia, transphobia and sexism are addressed in regular and obvious ways can significantly reduce the likelihood of this outcome.

“School environments where gendered violence is regularly confronted and reduced have been shown in research to be beneficial for all students, regardless of gender or sexuality.”

Family Voice Australia (FVA) and the Australian Christian Lobby (ACL) are part of a vocal contingent that agrees that bullying is a problem, but disagrees that the Safe Schools Program is the answer.

They suggest instead that the program is more about social engineering promoting gender ideology, and less about preventing bullying.

FVA National Director Reverend Ashley Saunders said they were pleased the NSW Government was scrapping Safe Schools. FVA suggested a number of alternative anti-bullying programs, such as RULER, CASSE Peaceful Schools and Choose Respect, that could be used in its place.

EMMA DAVIES

Safe Schools

The National Safe Schools Program provides school communities with tools and resources to help build a positive school culture for all, including for gay, lesbian, bisexual, transgender, intersex and queer (GLBTIQ) students.
"We believe it is actually harmful to the well-being of children and young people," he said.

"Even Ros Ward, creator of 'Safe Schools' acknowledges that the program is not about stopping bullying, or even about celebrating diversity, but about being transgender, about being lesbian, gay, and bisexual."

The term Gender Dysphoria is also hotly contested. The Royal Children’s Hospital Melbourne, Centre for Adolescent Health defines Gender Dysphoria as when a person’s physical sex and socially constructed characteristics, or gender, do not match, which causes severe distress.

FVA states that, while they are opposed to all forms of bullying, gender is determined genetically prior to birth.

"A very small percentage of people suffer from gender identity disorder, a psychological disorder for which treatment is warranted. Therefore, whilst support and counselling to help ‘transgender’ students on an individual basis is important, this does not require entire school communities to be indoctrinated into suspect gender identity philosophies," Reverend Saunders said.

While opposition groups may not agree, research does indicate gender fluidity is a risk factor in bullying and harassment in school.

The Western Australian Equal Opportunity Commission Report: Discrimination and Bullying on the Grounds of Sexual Orientation and Gender Identity detailed data from the La Trobe University Writing Themselves in 3 (WT3) study, which is the third national study on the sexual health and well-being of same sex attracted and gender questioning young people. With broader cultural acceptance, more students have come out as GLBTIQ in the last decade, but their experience of bullying has significantly increased, with researchers suggesting it could be due to increased visibility among their classmates.

According to the WT3 study, 61 per cent of GLBTIQ students who had been physically abused, 18 per cent physical abuse and 69 per cent reporting abuse in the forms of exclusion, cyber bullying and rumouring.

80 per cent of the participants experienced the abuse at school. The physical abuse experienced ranged from having clothes ruined to severe bashings and rapes resulting in hospitalisation.

Figures show that Australian GLBTIQ students and their families had protective policies were almost half as likely to be physically abused at school, and less likely to suffer other forms of homophobic abuse. Protective policies were shown to lower GLBTIQ student’s risks for self-harm and suicide due to homophobia. Students whose school had protective policies were less likely to think about and attempt suicide. With policies in place, suicide attempts were almost halved.

The data shows that homophobia is a distressing influence for children and young people and that children and young people are already exposed to other forms of splintered curriculums in Australian schools.

"The remainder includes contextual approaches that we’re taking, particularly knowing that gender diverse, same sex attracted, intersex and transgender children are more at risk of bullying and harassment."

"Schools remain one of the most trusted sites that young people draw from for their sexual health and relationships education. Despite this, there is a wide lack of content around diverse genders and sexuality."

"This was in response to schools asking us for guidance and advice about how to manage it if they found out that they had these students in their schools. We also had protective policies were already half as likely to be physically abused at school, and less likely to suffer other forms of homophobic abuse."

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The data shows that homophobia is a distressing influence for children and young people and that children and young people are already exposed to other forms of splintered curriculums in Australian schools.

"It is essential that teachers have an understanding of their students, their families, and that respect the family as the fundamental unit of society and parents as having the primary responsibility for the education of their children."

"The role of the state in education is that of a facilitator rather than a provider. The State must not supplant the role of the family in education," Reverend Saunders said.

Ms Hayes said the South Australian Department for Education and Child Development's closely aligned partners, students and their families with health services or family support services because often schools can only look at the individual young person or child, sometimes the family needs to play a greater role.

In the WT3 study, young people most frequently mentioned religion when responding to the survey questions on feelings about their sexuality. A conflict between same sex attraction and religion occurred frequently in regard to family, friends, school, and an internal conflict with their own personal faith.

"It’s an interesting discussion for a secular public education system," Ms Hayes said.

"We know that lots of people that might come in to a secular education system with whole range of spiritual and religious beliefs, or even just beliefs about what children should or shouldn’t know, so we try really hard to ensure that these beliefs are supported.

"The last thing we want to do is drive a wedge between students and their families, particularly over sexuality issues and sexual health issues," she said.

Ms Rawlings says that the Safe Schools Program remains a great example of how to create meaningful dialogue with students about homophobic, transphobic and sexist behaviours through both education and bullying policies. The recent curriculum changes included contextual approaches to reducing homophobia, biphobia and transphobia, and encouraging young people to be more inclusive of any difference and diversity," she said.

The lesson plans are based around the All of Us resource, which has received much of the brunt of recent criticism of the program. This resource contains plans for eight lessons that explore school culture and sexual and gender diversity.

"In his report, Bill Louden found that these lessons were consistent with the aims of the Safe Schools Program and were suitable, educationally sound and age-appropriate," Ms Rawlings said.

"It is essential that teachers have an understanding of the diverse nature of sexual and gender diversity, have an awareness of appropriate language, and feel empowered to challenge homophobic and transphobic bullying.

"The best way to support transgender students in schools is to listen to and support those students."
THERE is a clear disparity between education in the bush and the city. The regional education review is critical to address the key barriers and challenges that impact the educational outcomes of regional, rural and remote students. The review would take into account school entry all the way to job success to improve results for regional and rural people.

It will investigate achievement levels in rural, regional and remote schools and communities, and a student’s transition to further training and employment.

Regional Australia Institute (RAI) chief executive Jack Archer said the Federal Government’s new inquiry was welcome news and that it needed to look at the complete puzzle of rural education.

The RAI recently launched a new tool on the [In]Sight-Human Capital Index to provide information on policy gaps between education standards in rural Australia and capital cities.

Mr Archer said key data from the Index was based on NAPLAN results, and showed regional areas performed significantly lower than their metropolitan neighbours in both primary and secondary numeracy and literacy.

The Index also showed the proportion of young regional Australians aged 15-24 not engaged in either education or employment was 44 per cent higher in rural areas.

“Building a life-long culture of learning in regional Australia is critical to not only bridging the educational divide but to the economic prosperity of regional Australia,” Mr Archer said.

“It not only will investing in learning across the lifecycle build a more skilled and agile workforce, but it is imperative to keeping up with technological change. This review has to take the chance to craft a new way forward.”

The Federal Government supported the index statistics.

Overdue review

The comprehensive review of regional education aims to determine how regional, rural and remote students can be successful — not only at school, but in further study, training and employment.

EMMA DAVIES

THE ESTIMATED COSTS FOR BOARDING SCHOOL ACROSS AUSTRALIA WERE BETWEEN $7 000 AND $35 000 OUT OF POCKET COSTS PER CHILD, PER YEAR.
Building on the findings of the public submissions, Professor Halsey will lead face-to-face consultations during July and August 2017 with a range of organisations, schools and other education stakeholders to determine whether the current structure of schooling and education was successful — such as NAPLAN, TIMS and PISA results, data on high education transitions, employment and VET uptake — showed that the further the students move away from a large population centre or city, the further the results go down.

It’s important to ask questions about why this is the case, what’s going on and what are the impacts of this on the life opportunities of young people, and indeed on the vibrancy and wellbeing of the communities where they live, Professor Halsey said.

“There’s a degree of patchiness that happens in different locations and I’m interested in unearthing some of the practices that are going on in rural, remote and regional locations that are pushing back against the so-called trend.”

Professor Halsey was also interested in getting people to think about what we measure and in what terms of education.

“If I’m not for a second saying it’s not important for kids to read, write and add up — absolutely not — but there are alternative means to common ends, ways of engaging young people in curriculum terms, that illustrates and illuminates what they’re learning and what else could play an important role in student learning.”

The Isolated Children’s Parents’ Association (ICPA) federal president Wendy Hick welcomed the review.

“Distance is the main barrier to accessibility of education; most people think with distance education they just switch on a computer at eight o’clock and the teacher teaches the child until three o’clock, which isn’t really how it works,” Ms Hick said.

“Somebody must be with the child or education doesn’t happen.

“Families address this in different ways; some hiring a governess but quite often it’s completely disolved.

“Along with primary and secondary education, tertiary, traineeships and apprenticeships also faced issues with accessibility and affordability.

“While developments with Youth Allowance helped a number of students it was still a welfare payment and not necessarily available or relevant to all students.

“It’s the fact that they live so far from the education that needs to be addressed,” Ms Hick said.

“It’s addressed at the primary and secondary level in the assistance for isolated children scheme, however when they go to tertiary level, vocational training or apprenticeships, it’s just completely dissolved.

“While funding and physical resources were important, Professor Halsey believed community involvement in education and employing top quality teachers should be more of a focus.

“We know, whether it’s urban or regional or whatever, the success of a child at school is a complex interaction between outside the school fence, inside the school fence and between both of them,” Professor Halsey said.

Professor Halsey pointed to examples of remote schools with heavy community involvement such as Mypolonga Primary School and the Cowell Area School.

The Mypolonga Primary School students run a productive shop along the Murray River selling local arts and crafts, and the Cowell Area School worked with the local community to develop a productive aquaculture industry.

“What we’ve seen so far (with Mypolonga) is that by developing this productive partnership between school, community and local businesses, this has had an enormous impact not only on the culture of the school but also the culture of learning,” he said.

“The great spin off is that the students numeracy capacities are consistently well above expectations for their age and grade level.

“A significant number of the Year 7 students are at an average of or better than year nine students nationally.

“Resourcing is critically important, and what it’s linked with and how they’re thought about, how they’re used as well as the demand for more.

“But I think the enduring issue is attracting top principals and teachers to those regions.”

“We have to look at the way resources are currently being used and ask some serious questions. For example, if they were reconfigured, modified or reused in different ways, might that generate improvements?

“However, the big enduring issue is attracting top principals and teachers to those regions.”

The review was also underpinning the baseline statement that vibrant, productive, rural communities were absolutely critical to Australia’s wellbeing and future.

“In the end, to get people to live and work in rural communities, reasonable access to high quality education is essential,” he said.

The final report and recommendations of the review on regional education will be provided to the Government by the end of 2017.
THE Australian Curriculum, Assessment and Reporting Authority (ACARA) is responsible for collecting data from school authorities for accountability and reporting, research and analysis, and resource allocation purposes.

“This information is published on the My School website, with annual updates in March, including NAPLAN results from the previous year, school profile and population data, and school financial information, and in November and December including student attendance data on Indigenous and non-Indigenous students,” ACARA chief executive Robert Randall said.

“Principals of each school have access to the My School website through the Principal’s Portal, which allows them to update school comments, location, school authority and website URL.

“My School also supports parents in comparing schools within their local area, as well as with schools with students from statistically similar backgrounds. At the same time, the website allows teachers and principals to compare NAPLAN achievements of their students with the average achievements of other schools serving students from statistically similar backgrounds, and also to compare these with all schools in Australia.”

Having all the information on all Australian schools in one location provides nationally comparable data on students’ performance in literacy and numeracy as well as contextual information.

The website contains information on school finances, staffing, and student backgrounds to act as a guide for parents to understand how their local school is performing relative to other similar schools and students.

Association of Heads of Independent Schools of Australia (AHISA) national chair and principal of St Aidan’s Anglican Girls’ School in Brisbane Karen Spiller said while the My School site gave parents the opportunity to compare schools by NAPLAN results, it could not replace school visits or a more detailed examination of what schools offer.

“Unless distance makes school visits impossible, visits should most definitely be on parents’ agendas when seeking a school for their child. My School cannot tell parents if a school is a good fit for a student in terms of curriculum or co-curriculum choices, for example, or whether a school has the culture and climate likely to encourage a student to do their best right through Year 12.”

Mr Randall agreed that it was important that parents had a wide range of information available to them when selecting a school for their child and said the information on My School was only one component they could take into consideration.

“We strongly recommend that parents visit a prospective school and speak to teachers and principals to get a better understanding of the suitability of the school for their child,” Mr Randall said.

“Other aspects, such as school facilities, extra-curricular activities and sport groups, school culture and philosophy, may also be taken into account when choosing a school. Parents are able to choose what information is relevant or important to them.”

EMMA DAVIES

THE Australian Education Reporter

My School Website: supporting parents

The My School website provides national comparable data on all primary and secondary schools in the country, but is it the best guide for school selection?
The Association of Heads of Independent Schools of Australia (AHISA) national chair Karen Spiller.

"My School offers resources, including FAQs, to assist parents to navigate the website. ACARA is also working towards simplifying content on the site to make it more parent-friendly and accessible in the future."

The My School site does give some information about senior secondary outcomes for schools that offer Year 12.

It listed the percentage of students who go on to university, vocational education or training or who enter the workforce.

"Most parents whose aspirations for their children include tertiary study want more detailed information about Year 12 achievement, such as number of first round tertiary offers received, or they may be interested in whether schools have links with universities to provide opportunity for university study while students are still at school," Ms Spiller said.

"However, the broad range of subjects available at senior secondary level, the differences across the states and territories and the different offerings and curriculum specialisations in schools would make national comparisons of Year 12 academic outcomes virtually impossible on a platform like My School."

The NAPLAN testing does not go beyond Year 9 and parents should look beyond those results on the site.

NAPLAN tests literacy and numeracy skills, it wasn’t designed to access senior secondary achievement within subject disciplines.

"Australian research analysing Year 9 NAPLAN results and Year 12 tertiary entrance scores shows that independent schools add significant value in terms of academic achievement of students between Year 9 and 12," Ms Spiller said.

"This boost to Year 12 scores has been linked by researchers to what is called ‘academic press’, which roughly translates as the shared expectation among all teachers in a school that their students can achieve to the highest possible level."

"This sort of information cannot be gleaned from My School."

"Once parents have determined that a school offers a curriculum compatible with their child’s interests or talents or which will provide broad opportunities for development, they need to carefully examine school documents and reports and, again, talk with the principal and teachers."

The website also featured financial data for each school, including recurrent income and capital expenditure, disaggregated by funding source for all government and non-government schools.

"A comparison of the financial data on My School may be misleading,” Ms Spiller said. Parents need to be aware that per student funding for schools varies by funding source for all government and non-government schools.

"While test results did not give any detail about teaching quality, students who may have English as a second language, parents who are unemployed or with low literacy or who have moved around throughout their schooling, the Index of Community Socio-Educational Advantage (ICSEA) attempted to allow for this."

"ICSEA takes into account a number of factors such as parents’ occupation and education, as well as the geographical location of the school."

"These can give us an understanding of the level of the educational advantage of students at a school."

"Additionally, individual school profiles show the percentage of students with a language background other than English."

"We aim to make the information on the My School website as easy to use and understand as possible."

"We provide a number of factsheets and infographics, as well as general information about My School translated into 21 community languages."

"We also have animated videos to better illustrate how ICSEA works, and an overview of what the My School website offers,” he said."

The consensus is that although NAPLAN results should be considered by parents when seeking a school for their child, they were only one factor and should not necessarily determine the final choice of school.

"Schools are vibrant learning communities; they reflect intense work and human striving,” Ms Spiller said.

"They cannot be shopped for online as one would shop for a book or a new television, and there is no more information that could be added to My School to change that."

Australian Curriculum, Assessment and Reporting Authority (ACARA) chief executive Robert Randall.

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LIONEL CRANENBURGH

Aussie student visa changes a mixed bag

Policy changes to Australia’s $18.5 billion export market, which caters to about 404,000-plus international students, have unleashed a hornet’s nest of unexpected problems from the start.

The number of cancelled visas for overseas students – particularly from China – were caught up in delays to have their visas processed, forcing some educational institutions to postpone course commencement, according to news reports.

THE Coalition Government’s review, conducted by the Hon Michael Knight (AO), led to a Simplified Student Visa Framework (SSVF), which came into effect on 1 July, 2016. It promised great benefits by reducing the visa categories from eight to two and a simplified risk determination framework, among other changes.

From the outset, thousands of overseas students, particularly from China – were caught up in delays to have their visas processed, forcing some educational institutions to postpone course commencement, according to news reports. The Australian newspaper reported that recently introduced changes to processing of student visa applications had led to major delays, causing universities and English language colleges to postpone courses.

“We’ve had a 50 percent increase in applications this year, which is a good problem to have, but delays in processing are not good for our reputation,” University of NSW vice president international Fiona Docherty told The Australian in August 2016.

Brett Blacker, chief executive of English Australia, which represents English-language colleges, said a lot of these students were set to study English courses, then move into foundation courses and degree programs.

“There is a knock-on effect of delays means they will miss the start date for their next intake,” he told The Australian.

A Department of Immigration and Border Protection (DIBP) spokesperson acknowledged changes to the visa system had delayed applications.

The Department was on course to complete 75 percent of applications within a month, and students with a place at a university or college could arrive on a bridging visa to start their course in time.

DIBP has stepped up scrutiny to identify non-genuine students recruited by unscrupulous agents, ‘ghost’ students, where the student enrols at a university but does not attend, and ‘course hopping’.

“If you transfer to a course of study that is not eligible for streamlined visa processing or if you change the level of qualification you are studying towards, and have not been granted a new visa appropriate to your new course, your visa might be considered for cancellation,” the DIBP website cautioned.

Australia has experienced a dramatic increase in the number of international visas cancelled or under review in recent years. The number of cancelled visas for non-genuine students increased from 1978 in 2012 to 4930 in 2013 and 7061 in 2014, attributed to a variety of reasons to exploit loopholes for reduced education requirements.

The opinion of a recruiter based in Australia that recruits mainly Indian and Nepalese students through agents conducted a rigorous review of its agent’s recruiting processes.

As a result of the review it severed business ties with more than 40 agents. Former president of the Council of International Students Mr Thomson Ch’ng condemned the practice of recruiting non-genuine students in 2015.

He said visa cancellation took place for many reasons and there was more need for transparency in sharing data on visa fraud. It was important to know what proportion was due to actual fraud, breaches of immigration policy, cancelling study plans or withdrawal from study.

A study by Universities of Australia showed that enrolments for English Language Intensive Courses for Overseas Students (ELICOS) was a major cause for visa rejections, which Mr Blacker termed a “crisis” to The Australian.

The SSVF in 2016 to the English language test for visa applicants requires evidence of English language proficiency by students using the Pearson Test of English or the Test of English as a Foreign Language (TOEFL).

A benefit of SSVF announced by the Coalition Government was that it would support the growth of the international education sector by improving integrity while streamlining the process.

While it has done so successfully, an MP from India’s parliamentary lower house represented an aerospace engineer from one of India’s prestigious Indian Institutes of Technology, whose application for a visa was rejected on alleged suspicion of the “proliferation of weapons of mass destruction” after being offered a fully-funded PhD position by the University of Melbourne.

In the 2016 the Punjab Education minister Daljit Singh Cheema told the Times of India that he would take up the case of a student that had passed the Class XII level of the Punjab School Education Board (PSEB) and had failed to obtain a certificate. The student, visa subclass 572 rejected on the grounds that the PSEB qualification was not the equivalent of the Australian Grade 12.

On balance, reports are positive; students will need to show reduced financial requirements to support study and have an opportunity to work longer hours, while low-quality providers are being weeded out.

Split decision on independent public school system

WA’s independent public schools are growing rapidly amid controversy by a parliamentary inquiry report that it creates a “two-tier system” of education.

The matter resurfaced when former Education minister Peter Collier announced an additional 79 FT initiatives bringing the total to 524 in 2017.

The Education and Health Standing Committee established by the Government to inquire into IPS produced a controversial report claiming that the initiative “exacerbated” existing inequalities in the public education system re-enforcing a “two-tier system”.

The report said that IPS benefited by being able to recruit the best teachers with non-IPS forcing some to accept teachers “who are less suitable for the school environment and have less experience”.

It said that remote and hard-to-staff schools are particularly disadvantaged as a result and would fall further behind while high-performing schools would continue to improve.

“It is also too early to tell whether the IPS initiative has created the conditions which will lead to improved student outcomes in the future,” the report found.

“While the Department of Education acknowledges that teacher quality is paramount in improving student outcomes, it is not clear to the committee how the IPS initiative directly promotes improved teacher quality,” the report said.

In a media statement former premier Colin Barnett told principals that the increase in IPS to 524 was “a clear indication of the support from communities across WA for their local public schools”.

“Australia has once again looked to the West for innovation in education and we have delivered it through the IPS model which is being adopted nationally,” Mr Barnett said.

Mr Barnett’s comments reflected the Australian Government’s StudentsFirst Independent Public Schools $70 million initiative to support selected government schools in Australia to become more autonomous if they desired.

“IPS reflects the core objective of marketing schools’ image and brand in order for them to attract more students; it also helps the school conduct an independent review of each year’s performance. While there have been some expectations, staffing, requirements for educational standards and resources with Tasmanian’s Community Empowered Schools Program and NSW Local Schools, Local Decisions to set up.

“IPS may make some people feel more confident, innovative and flexible to do things, but I feel that it is a mental shift and that you can do very much the same things in a non-IPS environment as well,” Mr Barnett said.

It was important to know what proportion was due to actual fraud, breaches of immigration policy, cancelling study plans or withdrawal from study.

Geraldton Senior College principal Greg Kelly, said it was his opinion that IPS gave principals an opportunity to “hold conversations” about what they wanted for their school when recruiting staff.

“I believe that what is important, IPS or not, is the mindset you have for being positive and creative and wanting to make a better learning environment,” Mr Kelly said.

Hedland SHS principal Kelly Summers said that she liked the greater choice IPS offered to select her staff.

“IPS may make some people feel more confident, innovative and flexible to do things, but I feel that it is a mental shift and that you can do very much the same things in a non-IPS environment as well,” Mr Barnett said.

She found that IPS gave her a great opportunity to “use strategic governance” and feel empowered for parents and community.

She used the freedom to become, perhaps, the only school in WA where, with the help of their Locals, her students were doing a Certificate II in Rail Infrastructure so they could increase their employment opportunities in a mining environment.

The Department of Education Services conducts an independent review of each Independent Public School in the final year of the school’s three-year Delivery and Performance Agreement with the director general.
Lest We Forget

One might ask why students should study history. What will they gain from researching, analysing and considering the past? Why do the stories of the 41,000 service men and women who left from Albany in Western Australia, bound for World War 1, matter now in 2017?

MATT HAMMOND
Manager - Albany Heritage Park
National ANZAC Centre

The study of history, of Australian history, of stories such as those presented at the National Anzac Centre, encourages students of all ages to think about human values, about past, present and future challenges to our society and to the world.

Studying history promotes an understanding of societies, events, movements and developments that have shaped humanity from the earliest times. It is fundamental to understanding ourselves and others.

The National Anzac Centre, an award winning state-of-the-art interpretive experience, uses multimedia, interactive technology and deeply personal historical artefacts to create an emotional connection with the past woven through the stories of individual men and women who left from King George Sound to fight for Australia in WW1.

The National Anzac Centre is a tribute to those who served and in 2016, it was named by TripAdvisor as the number one museum in Australia.

Operated by the City of Albany and curated by the Western Australian Museum, the learning and engagement opportunities for students to achieve key Australian curriculum outcomes were a driver behind the development of the experience.

Multiple layers of information accessible within the centre deliver key concepts and content linking to both the primary and secondary history curriculum, in particular years 3, 6 and 9. The Centre provides excellent learning opportunities around the National Commemoration of Anzac Day, the development of Australian society, the significance of WW1 and the making of the modern world.

The centre combines exhibitions, rich in objects with highly interactive, multi-media content. To navigate and interpret this content students assume the identity of one of 32 actual service men or women, and follow their experiences of the Great War; from recruitment, through training and embarkation, ship-board life on the convoys, the conflicts at Gallipoli, the Middle East and the Western Front and for those lucky enough to survive, their return home and the difficulties they faced adjusting back into normal society.

The inclusion of technology and multimedia provides a layered approach to uncovering information, enabling teachers to highlight or omit a variety of concepts, themes or levels of complexity dependent on which year level of the curriculum they are working with. This provides teachers with the flexibility to develop and deliver their own specific programs and lesson plans.

The WA Museum has curated the experience in a way that enables students to be able to ‘do’ and ‘know’. As a result, the National Anzac Centre provides a learning environment in which students can:

• Be curious; pose interesting and engaging questions about the past.
• Discover that there are gaps in information and that working with the gaps in evidence is one of the most challenging aspects of piecing the past together.
• Discover that history is not one dimensional — dates and facts are only a small part of our past history — that is made of people and their experiences and circumstances at the time.
• Know that there are many perspectives from the past and about the past.
• Be aware that the past can be interpreted differently by groups and individuals.
• Develop and practice historical skills that will hone their investigative practice and compliment their curiosity.
• Immerse themselves amongst historical artefacts in a set context of major Australian historical event of significance, enriched by personalised narratives.

The use of primary sources provides an enriched by personalised narratives. The fortress is of exceptional significance for its key role in the first national strategy to defend Australia, and presents another significant education opportunity for visiting school groups with regards to the development of Australian society.

If it was not for the Princess Royal Fortress, the convoys which left King George Sound as interpreted within the National Anzac Centre chose Albany as a place to gather due to the defences and protection the fortress was able to provide the fleet.

More information is available at the National Anzac Centre website www.nationalanzaccentre.com.au.
Speech pathology increases student potential

Speech pathologists are invaluable assets for schools to determine if students have existing communication issues, and how to address them.

EMMA DAVIES

REPRESENTING more than 7500 members, Speech Pathology Australia is the national peak body for speech pathologists in Australia. Speech pathologists are university trained allied health practitioners who possess the knowledge and skills to assess and manage speech, language, communication and swallowing difficulties.

Speech Pathology Australia chief executive officer Gail Mulcair reported that all children and adolescents needed strong speech, language and communication skills to reach their full potential.

“Speech, language and communication underpin the basic skills of literacy and numeracy and are necessary for students to understand and achieve in all subjects,” she said.

“Speech, language and communication are closely linked to behaviour, educational attainment, how children and adolescents interact socially and their self-esteem,” she said.

“Some children and adolescents have speech, language and communication needs and require extra support during their primary and secondary school education.”

Ms Mulcair described the development of oral language skills as critical for two reasons.

“Oral language competence is the means by which people interact and form and maintain relationships with others – it’s a basic building block of social life,” she said.

“Expressive (using) and receptive (understanding) oral language skills form the basis of the transition to literacy in the first three years of school, in order to progress from learning to read, to reading to learn.”

In 2016, Speech Pathology Australia developed a clinical guideline for speech pathologists working in the area of literacy.

Within this guideline, Speech Pathology Australia endorses the critical role of speech pathologists in prevention, identification and management of literacy difficulties from infancy to adolescence. Utilising evidence-based approaches, speech pathologists work collaboratively with education teams to provide literacy services.

Ms Mulcair said that children with speech, language and communication needs may “slip through the cracks” as social communication difficulties become more prominent and the nature of difficulties more complex as the child becomes older.

“Children and adolescents with SLCN can go through their schooling not having these difficulties identified, or if they are, at times schools do not have sufficient resources to access the appropriate specialist intervention,” she said.

“At the get older, students are more likely to try to conceal their difficulties. “It is often the impact of the speech, language or communication need that is seen, such as poor literacy, behaviour problems or withdrawal from activities, rather than the underlying needs which can remain hidden.”

Research from the Australian Early Development Index (2012) showed that more than 17 per cent of children start school with developmentally at risk or vulnerable scores in the language and intelligence domains, and more than 25 per cent are at risk or vulnerable in relation to their communication skills and general knowledge.

About 10 per cent of all children have long-term speech, language and communication needs, and 14 per cent of 15 year olds have only basic literacy skills.

Speech and language difficulties can affect learning at school including literacy, numeracy and interacting socially with other children.

Long-term implications of speech and language impairment include poor academic achievement, risk to mental health, reduced employment options and social isolation.

RESEARCH

Ms Mulcair pointed to evidence from a number of high-quality Australian studies that indicated about one fifth of primary age children have speech, language or communication problems that impact on their education and learning.

“There is very strong evidence both in Australia and internationally of poor educational outcomes for students with speech and language problems,” she said.

Studies conducted by the Research Institute for Professional Practice, Learning and Education Department at Charles Sturt University, (with funding support from Speech Pathology Australia), demonstrated the poorer educational outcomes of students with speech and language problems in Australia.

The 2015, NAPLAN outcomes for children
identified with speech and language difficulties in early childhood. Second Report, examined NAPLAN testing at Years 3, 5 and 7 for children who had been identified by parents as having speech and language problems, when they began school.

The research factored in any effects from gender, socioeconomic position of the family, language background (other than English), Indigenous status, if the child had hearing problems and if the child was identified as having a disability.

Findings indicated that children with speech and language problems achieved significantly lower scores on every NAPLAN test (reading, writing, spelling, grammar and numeracy) at Years 3, 5 and 7 when compared to students without these problems.

Students who had both expressive and receptive language problems had not seen a speech pathologist.

“Schools that employ speech pathologists report that they have skills that are well suited to assist teachers to enhance teaching and learning in relation to communication, oral language and literacy acquisition.”

“Speech pathologists understand the links between communication and literacy development, and the processes that underpin reading and spelling, as well as expertise in supporting the development of children’s social communication skills.”

“Speech pathologists therefore have the potential to play important roles in support of students in schools.” Ms Mulcair said.

Once students begin school it is widely recognised that it is more effective for schools to adopt a ‘whole school’ approach to successfully improve student learning outcomes.

“A collaborative approach between teachers and speech pathologists working together as part of the learning support team is an extremely effective way to assist students with speech, language, literacy and learning difficulties,” Ms Mulcair said.

Several States – Victoria, Queensland, South Australia and Tasmania – employ speech pathologists in schools through their education departments; however the role and number of speech pathologists vary.

“Other States and Territories do not have department of education speech pathologists, but many schools use individual budgets to employ their own practitioners, while some have both government-funded and private speech pathologists.

“If a child’s school does not employ or have access to a speech pathologist, the parent may choose for their child to see a speech pathologist privately,” Ms Mulcair said.

“However it is crucial that the speech pathologist develops an effective working relationship with the child’s teachers to maximise outcomes.

“All therapy must be linked to real life outcomes so collaboration between the speech pathologist and the child’s teacher and school is essential.”

Speech Pathology Australia provided a submission to the Australian Department of Education and Training’s National Year 1 Literacy and Numeracy Check.

“In response to poor NAPLAN results in 2016, we called for the fast-tracking of the introduction of a standardised Year One literacy and numeracy assessment of reading, phonics and numeracy skills,” Speech Pathology Australia National President Gaenor Dixon said.

“Such an assessment will help early identification of those students who need additional assistance with oral language and early literacy skills.”

“We know that children with communication and literacy problems start behind and without appropriate support may never catch up.”

Speech Pathology Australia stated that while oral language is naturally acquired, reading is a skill that must be learned; and while it supported the screening of all Australian students’ literacy skills at Year 1, there were significant benefits to be gained from screening students at the commencement of preschool, at school entry, and after six months exposure to formal schooling.

“Surveillance prior to and upon entry to school is important because the skills that underpin literacy learning (alphabet knowledge, phonological awareness, vocabulary, oral language and listening comprehension) are acquired or emerge well before a child enters school,” Ms Mulcair said.

“Many of the predictors of literacy learning difficulties are evident or emerge prior to a student starting school, and prevention and early intervention of difficulties is more effective than remediation.”

Speech Pathology Australia believes that data collected from the Year 1 Literacy and Numeracy Checks have the potential to have a positive impact on literacy and numeracy outcomes in schools.

“The data can be used to identify students who are at risk of, or who are experiencing, literacy and numeracy difficulties and can then be used to provide differentiated teaching and support based on the student’s needs,” Ms Mulcair said.

“Once these students are identified, further assessment would be required by a speech pathologist to develop a profile of the student’s strengths and weaknesses and optimal learning style.”

“Using a Response to Intervention (RtI) model can assist schools to improve student learning outcomes and develop effective collaboration between teachers, parents and speech pathologists.”

The RtI model supports the identification of students who are struggling at school; providing progressively more intensive, evidence-based support, while measuring and monitoring progress in order to make decisions about the need for further intervention.

“The model facilitates timely identification, discriminates learning problems from exposure and opportunities issues (especially from students from disadvantaged or culturally and linguistically diverse backgrounds) and promotes effective collaboration across general and special education staff.”

Speech Pathology Australia has also been commissioned by the NSW Department of Education to develop the ‘Speech Pathology in Schools Resource Project’.

“The main goal of the kit is to provide information for NSW government schools about how speech pathologists can work collaboratively with educators,” Ms Mulcair said.

“The resource will include information for primary and secondary principals, teachers, families and speech pathologists. The content of the kit has been developed in consultation with the NSW Department of Education and a range of key stakeholders.”

A national survey was also distributed to Association members and non-members with the aim to capture data in each State and Territory regarding current speech pathology practice in schools, the challenges faced and suggestions regarding best practice.

Speech Pathology Australia recently developed a vision for the future of the profession in Australia: Speech Pathology 2030 – making futures happen.

Core aspirations of the vision included communication accessible communities, access for all, timely services across the lifespan, clients and communities driving service delivery, skilled and confident families and careers, collaborative professional partnerships, quality services innovation and continual pursuit of knowledge; as well as a diverse and dynamic workforce.

Working alongside principals and teachers as part of the educational team to form collaborative professional partnerships is one example of an aspiration from Speech Pathology 2030 – making futures happen.

“Having skilled and confident families and careers is also a key aspiration for the speech pathology profession, with parents often being the first to recognise their child may have a speech, language or communication difficulty.”

“Research indicates parents have a significant effect on the educational achievement of their children Ms Mulcair said.

“They have different views of their children’s communication strengths and needs because of their knowledge over time so maintaining an effective relationship between home and school is important.”

 Depending on the State and Territory, school aged children can access speech pathology at their government or independent school. Parents who have concerns are encouraged to speak with their child’s teacher to find out if their child’s school has access to a speech pathologist.

“In addition educators can direct parents to Speech Pathology Australia’s website for relevant fact sheets regarding milestones for speech and language development.

“They can also find a speech pathologist who practises privately using the ‘Find a Speech Pathologist’ webpage.”
EDUCATIONAL SPEECH PATHOLOGY & THERAPY SERVICES

School based Speech Pathology, Occupational Therapy & Allied Health services.

Educational Speech Pathology & Therapy Services ESP&TS has been providing school based, school funded Speech Pathology, Occupational Therapy and other Allied Health services within schools for the past thirty years.

ESP&TS, in combination with our newer branch of service OSAH-S, currently services over 100 DET schools in Sydney. ESP&TS also provided services to schools in Darwin for a three year period.

Our long term and extensive experience with DET based preschool, mainstream primary, secondary and SSP's has put us in the unique position to provide insights into context, communication, collaboration and concerns surrounding the provision of school based services.

There are 2 elements of our school based services:

Educational Speech Pathology & Therapy Services – school based school funded Speech Pathology, Occupational Therapy & Psychology services.

One Stop Allied Health – School Services – School based parent pays services. Speech Pathology, Occupational Therapy, Psychology, Podiatry, Paediatric Physiotherapy. NDIS case management.

www.educationalspeechpathology.com.au

www.OSAH.com.au
EDUCATIONAL SPEECH PATHOLOGY & THERAPY SERVICES

ESP&TS provides school based school funded therapy services including Speech Pathology, Occupational Therapy, Psychology & NDIS Case Management services.

The philosophy of ESP&TS has always been the “equity and access for all students to quality therapy services within the social and academic context of a student’s school experience”.

Our logo represents our dedication to communication and collaboration with schools and parents to “wrap around and embrace” the needs of students to achieve a cohesive and shared level of identification, understanding and responsibility.

In order to achieve an integrated and “systemic” influence within a school, ESP&TS services support three main domains

How each of these domains are serviced is tailored for each individual schools context. Therapists are advised to explore in detail with the school their individual context. Factors such as the CALD background of the community, the SES of families, the structures already in place within the school for the support of students with additional needs, the methods currently being utilized in classrooms and most importantly the understanding of what Speech Pathologists, Occupational Therapists and other allied health can offer within this system. ESP&TS has developed through-out the years of practice a substantial set of processes for exploring and supporting a mutual understanding of services so that at the outset the foundations for a successful partnership are put in place.
577,000 Australian students have language problems. 21 per cent of children have expressive language difficulties and 13 per cent have receptive difficulties upon entering school.

Without treatment, these students could suffer from a range of issues including inability to reach their potential, poor self-esteem, behavioural problems, and decreased employment options, as difficulties can continue into adulthood if untreated.

As one of the largest providers of mobile speech pathology services in NSW and the ACT, Communicate Speech Pathology has witnessed the effects of communication difficulties in students, both at home and at school.

Sometimes a child may cope better one-on-one, however when they enter the busy, noisy classroom environment it presents many more challenges.

Teachers often report that language disorders in their students were not previously diagnosed, causing confusion about why the child is struggling in the school environment and perhaps appearing lazy or naughty.

Difficulties with receptive and expressive language become more noticeable, as classroom language is more formal, spoken and written instructions are more complex, and there are greater demands on a child’s attention.

For children with a specific language impairment, their cognitive ability is age appropriate so it can be confusing as to why they are not making progress.

Communicate Speech Pathology has worked with students of all ages and types of difficulties within hundreds of public, private, Catholic and independent schools across all socio-economic levels and geographical locations. Communicate Speech Pathology can assist schools to tap into Government and Medicare funding, while for schools with greater resources the company can offer more comprehensive, extended programs.

Services include professional development for teachers, social skills programs, speech and language therapy for individual students, no-gap National Disability Insurance Scheme funded therapy, kindergarten screenings, articulation small group therapy, and whole class language stimulation for refugee children.

The company also provides support for ASD students in high school, assessments to obtain further funding, support for students with ASD in mainstream schools, and AAC for children in a support unit.

Whole class, small group and individual sessions are offered depending on the circumstances of the school and what is most beneficial for the child.

A successful school therapy program boils down to the quality of the therapist and their ability to develop a strong, collaborative working relationship with Principals and teaching staff involving them in all aspects of programming.

Empowering teachers to recognise and support communication difficulties is key. Supporting teachers in the class environment and having them sit in on sessions is a large part of the approach.

Communicate Speech Pathology leaves a lasting impact on the school well after therapy programs are completed.

The company’s mobile model also ensures that therapy is not just left at the school gates. Communicate Speech Pathology works with children at home to generalise new skills to all environments, assist parents in understanding their child’s difficulties and help them succeed in their academic journey.

More information can be found at: www.communicatespeech.com.au.
Speech pathology is an important tool to help nurture children with language difficulties.

Image: Cessnock Public School.

NEW South Wales could be described as the poor cousin when it comes to government funded speech pathology services in schools. That’s the opinion of All Areas Speech Pathology founder and director Jane Beale. Jane has 24 years experience as a speech pathologist working directly in schools, having spent a decade in South Australia as speech pathologist and manager of Country Regional Services for the State Government (DECS).

Bringing her knowledge of collaborative work between teachers and speech pathologists with her, Jane now heads a staff of 37 speech pathologists who deliver speech pathology services in multiple schools in the Hunter, Maitland, Lake Macquarie, Port Stephens, Newcastle and Central Coast regions.

Ms Beale feels strongly that NSW school teachers need the opportunity to work collaboratively with school-based speech pathologists to develop and implement classroom-based goals that assist students with delays to improve their speech and language skills. Most importantly, teachers need acknowledgment that they are working in new territory – one where many children arrive at school with speech and language skills that are well below the expected range for their age.

“When a student experiences the confusing and often emotional state of not understanding what is being said to them, he or she is likely at some point to ‘switch off’ and disengage from the learning process,” Ms Beale said.

“Many students starting school with language delays have the capacity to learn and thrive, but their oral language deficits prevent them from benefiting from the language rich environment that is happening all around them in the classroom.”

All Areas Speech Pathology staff have been working in the Cessnock Community of Greater Public Schools (CCGPS) since 2013.

Over the five years of the project, Cessnock Public School principal Ms Jenny Rozynski and Ms Beale have developed and implemented a speech pathology service that is low cost and delivered in the classroom.

Services include screening assessments of speech and language skills, hearing screenings and ear health checks, training and development sessions for staff, speech therapy sessions and assistance with referrals to Medicare and National Disability Insurance Scheme funded speech pathology intervention.

Ms Rozynski noticed positive change in her teaching staff which she attributes to having the speech pathologists “right there” in the classroom.

“Teachers are noticeably more confident and able to address speech and language issues during daily teaching routines,” she said.

“Extra time hasn’t been needed to implement the speech pathologists’ recommendations, just a slight adjustment to the way communication occurs and language tasks are delivered.”

Regular therapy provided for individual and small groups of students resulted in up-skilling of teachers and SLSOs; therapy is delivered in or next to the classrooms, with direct feedback and modelling for staff.

“I’m seeing therapy techniques being adopted and used throughout the day, right in the classroom,” Ms Rozynski said.

**SPEECH PATHOLOGY SERVICES FOR SCHOOLS, STUDENTS AND STAFF**

- Flexible style of speech pathology service delivery
- Students seen individually, in pairs or in small groups
- Therapy and in-class sessions tailored to fit the needs of the school
- Teachers, support staff and students benefit from the intervention
- Assistance for families to obtain external funding where possible towards the cost of speech therapy, including Medicare bulk billing, Aboriginal Language Outreach Program and NDIS
- Staff workshops with practical and quick ideas that teachers can incorporate into everyday interactions with students to help improve speech, grammar, vocabulary and language skills

We work with primary and high school aged students

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In-school therapy programs

LEARNING Links is a long established not-for-profit organisation focused on helping children with learning difficulties. In highly-qualified team of speech pathologists have worked with schools across Sydney since 2003.

Speech and language skills are essential to academic success and learning. The ability to communicate with peers and adults in an educational setting is crucial for a child to succeed at school.

The Learning Links program supports students who have difficulty with speech sounds, or understanding and using language. The therapy programs delivered in schools are based on the specific needs of both students and teachers.

The Learning Links therapists work in close collaboration with the school and parents to design a flexible and responsive program to support the child’s learning. Therapy delivery can range from team teaching, class observation and screening, in-class groups, or individual and group withdrawal. Support can also be provided for individual planning meetings and teacher professional learning.

Currently Learning Links is running therapy programs in 15 different schools across Sydney with outstanding results.

From the initial contact with us, through to delivering the program to students, we were very impressed with the program and have found it incredibly beneficial for our school community,” Hurstville South Public School assistant principle Karen West said.

“Importantly this Therapy in Schools Program has supported numerous children with learning difficulties to improve confidence and engage in the classroom environment.” More information on the Learning Links Therapy in Schools program can be found at: www.learninglinks.org.au.

Speech pathologist working with students.

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The University of Canberra Professor Dick Telford has an impressive resume. Professor Telford is a Professorial Fellow at the Research Institute for Sport and Exercise, an Adjunct Professor at the College of Medicine, Biology and Environment and is the running coach of the Australian National University. He was also the first sports scientist employed by the Australian Institute of Sport and the 2017 ACT Senior Australian of the Year winner.

With more than 40 published peer reviewed articles, Professor Telford is a renowned expert on the effects of physical activity and education of school children. Professor Telford was the research director of the Lifestyle of Our Kids (LOOK) Study of 734 Australian children between eight and 12, which found that the main difference between lean and overweight children was that lean children were more physically active.

The LOOK study had two purposes; first to investigate the effect of physical education in primary schools on the physical and psychological health and growth of children, and secondly, to look at physical activity and fitness’s role during early childhood and adolescence on quality of life in middle and old age.

“The kids who were becoming leaner had better control over their body composition, naturally healthy kids, and when we looked at the diet and the physical activity of the kids who were leaner they actually ate fractionally less sugar, less fat and less calories,” he said.

“We concluded that physical activity was a very important driver in maintaining body composition in our kids.”

Although physical activity was a driving factor, the impacts of nutrition cannot be overlooked. The NSW Health Department recently told a parliamentary inquiry that at least one in five school students were overweight or obese, with only 28 per cent of children adequately active. These figures and rising rates of obese children with associated physical and mental health issues are concerning. A concentrated effort needs to be made to address nutrition and physical education in schools nationwide.

Australian Council for Health, Physical Education and Recreation (ACHPER) national executive director Alison Turner said that while nutrition was part of the National Curriculum, ACHPER would support funding of a National Nutritional program for students to provide professional development for teachers.
ACHPER played a role in curriculum development, publishing resources and organised and developed professional development for teachers of health, physical education and sport.

The council worked with National Sporting Organisations (NSOs), the ASC and reached out to more than 7000 schools throughout Australia, advocating for quality health, PE and sport being a vital component in schools to develop student health and wellbeing.

Recent data from the Active Health Kids Association National Physical Activity Report card suggested there needs to be a renewed focus on getting kids active and healthy, but the issue of obesity was complex and involved families, schools and communities.

“The Australian Sports Commission (ASC) in conjunction with NSOs has offered opportunities to be part of a health promotion initiative that actually addresses some of these health issues,” Ms Turner said.

“The $100 million Sporting Schools program was a collaboration between the Federal Government, the ASC and about 30 NSOs.

The program was offered to more than 5000 schools in 2016 and reached more than 1 million students.

Sporting Schools broadened the traditional notion of sport to get more children involved and offered online resources, lesson plans and coaches to increase participation in before and after school sports.

The initiative provided grants to deliver sporting activities and to co-ordinate sporting organisation, coaches and teachers to deliver programs.

“It’s a really great contribution to student health and wellbeing, but schools and teachers offer sustainable opportunities for students to learn about health choices from an educative, strength-based point of view,” Ms Turner said.

“Sporting Schools and other programs are engaging parent and community support and offer children opportunities to build on that, but the educative value of a Health and Physical Education curriculum (with sport included) is going to empower students to make choices.”

The ASC was also responsible for the Clearinghouse for Sport, a knowledge sharing initiative which had shown compelling evidence that increased levels of physical activity could bring wide ranging health benefits that extend beyond the physical.

“We found that with children who do not get proper physical education in primary schools, and that’s the majority of public primary school children in Australia, go in to secondary school with higher levels of cholesterol, higher risk factors for type two diabetes, and inferior bone development particularly in girls,” Professor Telford said.

“The real clincher we found, is that the children who spent more time in physical education (60-90 minutes more per week than the control group) between Year 3 and 6 actually improved their NAPLAN scores (than the control group) between Year 3 and Year 4.

“Around the States there is a wide variation of the hours of health, physical education, sport and physical activity,” Ms Turner said.

“Local support for quality physical education through the employment of PhysEd specialist teachers and also professional development for classroom teachers to deliver the current HPE curriculum vary.”

In March, the national forum for health and physical education (HPE) curriculum was held in Brisbane and discussions were held on stages of development and implementation nationally and across a State and Territory context.

“ACHPER work on a national basis to advocate for the Australian curriculum but it’s important to understand that the States and Territories are responsible for implementing in the local context,” Ms Turner said.

Professor Telford was not too concerned about the different education systems around the country as long as kids were physically active.

“People have got to understand the real value of physical education,” Professor Telford said.

“40-50 per cent of kids are deemed to be overweight for their age and a lot of them aren’t eating enough fruits and vegetables.

“What we’ve got to do now get children involved in quality physical education in primary schools.”

Another aspect of the LOOK study Professor Telford had not yet widely publicised, was that all the affects in children’s learning and fitness came about without an overall increase in physical activity habitually during the week – they simply got two sessions of physical education every day at school.

“Just doing physical education twice a week, where the kids are having fun and playing games and learning for two lots of forty five minutes sessions each week for 30 weeks during the year over the four year trial produced these results,” he said.

“Physical activity could improve cognitive functioning, memory, concentration, behaviour and academic achievement, while negatively impact brain health, inhibition, working memory and cognitive flexibility (multi-tasking), which is considered vital to success at school, work and throughout life.”

The LOOK study was the only four year global randomised control trial that looked at all the factors and Professor Telford believed it was powerful information to go to politicians with.

Rather than burden the education system by bringing in an expensive extra physical education teacher in every school, Professor Telford and his team trialled putting a physical literacy coach in a group of eight schools, which so far had the same effect as an additional specialist physical education teacher would.

“This physical literacy coach coaches the classroom teachers to teach physical education better and we want to see if by professionalising some of the teachers, can we bring up the standard of physical education to approach what we found in the LOOK study,” Professor Telford said.

The role of the coach was to motivate and professionally develop teachers to be more effective in their physical education, to make actually improved their NAPLAN scores of around 10-13 points more than children who spent more time in the classroom.

“When we talked to the teachers in the PEPL study and the LOOK study, they actually said, even before I gave them those results, that the kids were concentrating better in class when they had completed their physical education.”

Research showed children could spend less time on academic learning, and more time being physically active during the school day, without affecting their academic success or progress.

The results may be due to the specific way in which the physical education classes ended.

The Blue Earth Foundation, which supplied physical education programs to schools, sat the children down for a quiet period of reflection after the activities.

Some States and Territories have more required hours of physical education than others, with the average around two hours per week.

“Around the States there is a wide variation of the hours of health, physical education, sport and physical activity,” Ms Turner said.

“Local support for quality physical education through the employment of PhysEd specialist teachers and also the

2017 ACT Senior Australian of the Year Professor Dick Telford.

The students would then go back to class having cooled down and were mentally prepared for more coursework.

With abundant research from Professor Telford and his team showing the correlation between physical activity and improved learning, it seemed unusual that there was no mandatory requirement of sport and physical education in schools across Australia or a National Physical Activity Strategy.

The real clincher we found, is that the children who spent more time in physical education (60-90 minutes more per week than the control group) between Year 3 and 6 actually improved their NAPLAN scores (than the control group) between Year 3 and Year 4.
Vertical learning empowers students

Schools are turning away from traditional education methods and implementing flexibility in classes and subject choice to empower and engage young people in their learning.

EMMA DAVIES

MOUNT Alexander College (MAC) in Flemington, Victoria is not your average school, and neither is principal Wayne Haworth a traditional educator.

In his first role as principal of a secondary school, Mr Haworth was interested in delivering an innovative approach to education. Firstly, he consulted with the school community, staff and parents to understand what they wanted from the school, and with the leadership team he implemented drastic changes.

“Vertical learning is when students are grouped together according to their passion and according to where their learning is at or point of need,” Mr Haworth said. “This is in contrast to a traditional school model where students are potentially grouped according to their age.

“You’ve got multiple ages in the one class so you’ve got that vertical age cross section.”

In most secondary schools, a teacher may be confronted with the challenges of meeting the needs of about seven different levels of learning. Even the very best teachers will struggle to differentiate to suitably challenge every student in the class.

At MAC, where students are grouped according to their interests and points of need means that the students level of learning is more closely aligned. This then creates a learning environment in which all students can be appropriately challenged.

“We’ve had some of the younger students in classes with the older students because they’re capable of learning at that level, and some of those students have been working at the same level and sometimes at a higher level,” he said.

“Like all new programs, we have found tuned some of the processes.

“When we initially started with the vertical system, the students felt a bit less connected with their peers because they’re effectively sitting in a class with students they don’t know as well.

“As teachers it was important to work with students, enabling social connections with mixed ages all with the aim of creating a cohesive classroom.”

Early 2016, students initially connected with their familiar friendship groups, but over the last 12 months the friendship groups were now more diverse and widespread among the students of different ages.

Mr Haworth took inspiration from the work of Peter Hutton at Templestowe College and the model of enabling students to take control of their learning.

While on a study tour to the UK in 2008 Wayne was introduced to a vertical learning model.

This school found by introducing a model where students of different ages mixed frequently, bullying effectively disappeared overnight.

The transition from primary to secondary school is a big step.

If students never mixed with students of different ages, artificial barriers could occur and students could feel intimidated. At MAC, Entry Level (Year 7) students spent most their time with students of the same age.

Mixing with older students was gradually introduced during the elective programs and house activities.

“The vertical system we have implemented over the last 12 months at our school has students mixing all the time in a variety of settings - clubs, sports and even on school camps,” he said.

“There’s a breaking down of barriers, it’s very harmonious and we’ve noticed that across the school.”

The benefits of learning and teaching in multi-age classrooms included more holistic, child-responsive curriculum practices that considered the understanding, capabilities and disposition that children need to work in diverse environments in the future where workers will need to be multi-skilled, literate, cooperative, creative, adaptable, independent and resourceful.

Mr Haworth is an advocate of developing creativity, critical thinking skills and the ability to work independently and believes that one size does not fit all in education.

At Mount Alexander College, student choice and voice was encouraged to enable students to feel empowered and to take control of their learning.

All students received course counselling to help them plan their future and guide their subject choice.

Each student at MAC has their own Individual Learning Plan (ILP).

MAC has removed the reference to year levels, instead referring to Entry Level (Year 7), Above Entry (Year 8-11), and Graduate (Year 12).

“When I first arrived at the school, a student in Year 9 would have had a limited choice in electives. A vertical approach to learning has created many more opportunities for learners.

MAC offers over 100 different electives. A vertical approach to learning has created many more opportunities for them to strive to achieve their best.”

“We engage in regular professional learning for staff in a continuous effort to support their capacity and develop their skills.

“I encourage all schools to consider the flexibility and learning benefits of vertical learning. However, some educators can be conservative.

“If it’s not broken, why fix it? But if there’s a better option and a more contemporary approach to learning in the 21st century learning, why wouldn’t schools consider it?”

Prior to his appointment as principal at MAC, Mr Haworth was an assistant principal of Nossal High School, one of Victoria’s selective government schools catering for gifted and talented students.

“In most schools, our gifted and talented learners can be held back,” he said.

“At MAC we have removed the glass ceiling that usually exists.

“We provide a tailored made program to suit the individual needs of all students.

“Students can be accelerated in one or more subjects, which has major advantages over typical SEAL (Select Entry Accelerated Program).

“In schools that offer SEAL programs, students are expected to be accelerated in all subjects.

“At MAC we prefer a more personalised and tailor made approach.

“We’ve got happier students, our students are more engaged.

“The classroom climate is now more productive and we have less classroom management issues.

“Parents are happier because their children are going home enjoying learning and school.

“Interest in the school is increasing so too are our enrolments.

“There is a positive vibe amongst the staff because they can see the school now taking the next step in its evolution.

“We’ve got other schools coming to us, having tours and finding out what we’re doing. “Parents and families across the region are hearing about the additional learning opportunities that come with our more flexible approach and our student empowered opportunities for learning and they’re seeing there is an alternative.”

Mr Haworth was pleased with the program’s success, and while there were slight challenges around peer connectivity at the beginning, the model was now becoming embedded, allowing the students to become more engaged, socially connected and empowered in their learning.

“There is an exciting buzz throughout our school and in the community,” he said.

“We receive nothing but positives in terms of our vision and approaches to learning.

“Our students, parents and staff just love it!”
Boarding benefits

Tiwi College is a unique Indigenous boarding school located at Pickataramoor, Melville Island, off the coast of the Northern Territory.

EMMA DAVIES

The Independent sector is the major provider of boarding school education for Indigenous students in Australia, with almost 2,400 Indigenous boarders attending 117 Independent schools in 2016. Many of these Indigenous students come from remote communities where primary level education is the only local schooling available, and leaving their communities for boarding school is the only option for secondary studies.

Tiwi College was formally opened in 2008. In 2010, the Tiwi Education Board comprised of senior men and women from all Tiwi communities – took full responsibility for the governance of the college. Principal Ian Smith believes that his previous work on the islands and familiarity with the Tiwi culture was what landed him the job.

“They wanted someone who understood the people, understood the Tiwi way of going about things and who understood that Islander people have certain protocols which are very, very important,” Mr Smith said.

Tiwi College took a holistic approach to learning, and balanced weekly boarding with students returning home on the weekends.

“The kids would come in on a Monday morning and we’d take them out on a Friday afternoon; we’d balance that out with a lot of activity after school, homework tutorials and sessions,” Mr Smith said.

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“Students want to attend schools they feel connected to, and that they feel excited about attending. Student-centred schools are those that build everything around the families and students they serve,” Professor Rogers said.

“A holistic and community centred approach with deep and continual home-school connection is the only approach I have seen to be truly successful for students as well as families.”

Tiwi College takes in to account the culture of the islands and the children’s different learning styles and aimed to provide a flexible and diverse curriculum that promoted the strengths of the Tiwi while encouraging rich exploration of new concepts. The emphasis was on a team-based approach to learning, having developed and adopted a Tiwi based pedagogy to provide an effective and relevant approach to teaching and learning with strong links to students’ lives, land and community.

“A balance is needed,” Mr Smith said.

“As a directive from the Tiwi Education Board, the students must learn literacy and numeracy daily, and they must have the skills and knowledge to make it in the Western world.”
“At the same time, from an emotional perspective and a wellbeing perspective, you can’t lose your identity. So a culture program embedded in the curriculum in some form is vital.

Teachers aimed to provide a teaching and learning style which is relevant to students’ interests, delivered in context, and which draws on Tiwi students’ strengths as visual, kinaesthetic and aural learners. Professor Rogers is an advocate for embedding Indigenous culture in to subjects studied at school.

Research shows that Indigenous students achieve better outcomes when Indigenous culture is woven through the curriculum in meaningful ways. This also allows the non-Indigenous students to learn and develop a better understanding of Australia,” she said.

Ms Barker and Ms Salter agreed that culture needs to be embedded into the curriculum.

“All education needs to look at who you are working with and needs to be flexible to meet the needs of that school community,” Ms Barker said.

“It’s also empowering the community too,” said Ms Salter.

“You’re also empowering the people working in the schools because it’s showing a sign of respect for their culture and also showing respect for them (personally) and puts them on equal footing.”

Student’s results at Tiwi College were openly explained to students and the wider community via ongoing teacher-student feedback, reports to parents, and reporting to Tiwi Education Board members.

The college aimed to develop students both academically and personally with the capabilities necessary to be both work ready and contributing citizens to their Tiwi communities and Australian society.

There were many cultural and community considerations in the education of Indigenous students and many students who had to move large distances from their homes faced a variety of cultural challenges.

“Besides the issues of being away from home and community, Indigenous students often face cultural issues when being moved to predominantly non-Indigenous boarding schools in large cities, where teachers also report feeling underprepared to teach Indigenous students and content,” Professor Rogers said.

“This leads to a push and pull of complicated and often challenging situations within boarding schools, as well as between school and home.

“Often school expectations are not made clear to Indigenous families, especially around how often children can return home for cultural business, for example.”

Principals and teachers need to work in close consultation with Indigenous families to ensure cultural traditions and heritage are respected and Indigenous culture was embedded in to mainstream subjects to help build a bridge between Indigenous culture and Western concepts.

Tiwi College ran a thorough induction program for new teachers, particularly those not of an Indigenous background.

“We go through a lot of information about the Tiwi Islands, the geography and the seasons and then the culture, Tiwi protocols and language and that forms the foundation of how we structure Tiwi College and why we have certain arrangements, because it’s all based around the Tiwi identity,” Mr Smith said.

“As the induction unfolds we get more and more specific to the school, but it has a broad sweeping foundation of, this is where you are, this is what you’re about to expect, and witness and experience and this is why we do these certain things here.”

Mr Smith believed that the model of education at Tiwi College could be successfully replicated in other remote areas in certain cases.

“It all depends on the arrangements. We’re in the islands, the geography is relatively small. If you’ve got say, a group of communities in desert country or on the mainland and they’re reasonably close together then a strategically placed boarding school based on the approval of community members, that’s relatively and politically central to those communities, may be very successful.

“Here on the Tiwi Islands it has worked and I suspect top end/salt water country it would as well.”

Indigenous girls and women are taking on some of Australia’s biggest challenges and winning.

LIONEL CRANENBURGH

“DEVELOP a girl and change the community.”

This is the Girls Academy Program mission that uses community-led solutions to tackle the ‘Big Four’ of increasing school attendance, raising academic achievement, improving graduation rates, and post-school transitions.

The Girls Academy Program, founded in 2004 by Olympian and champion basketball player Ricky Grace, boasts 16 centres, with 12 more commencing this year at 34 schools in Australia with 2500 girls.

Female students have chalked up impressive records with graduation rates up by 79 per cent from 2010, attendance increasing by 11 per cent in participating schools with 70 per cent having post-school plans and Year 12 enrolments up by 276 per cent in a five year period.

Indigenous women also act as role models and mentors, totalling 79 per cent of school based program managers and development officers in WA schools, and 40 per cent of regional managers.

The Girls Academy Program body Role Models and Leaders Australia said that in every social measure, Australian Indigenous girls their non-Indigenous peers in health, education, employment opportunities, earning capacity and life span.

Dr Phil Paiff, regional manager for WA, worked with program managers and development officers to empower and motivate Indigenous girls to break the cycle of poverty, drugs and alcohol.

Empowerment and resilience tools used to achieve change are inspirational Indigenous women, extracurricular activities, career pathways, leadership, teamwork and community advisory committees.

“Senior girls are encouraged to do Certificate II up to IV and the Academies work with Vocational Education Training Coordinators in school to set up structured work placements,” Dr Paiff said.

“Some girls now work as Development Officers in our Academies.”

Leadership opportunities and high expectations were part of Girls Academies through work on student leadership committees, public speaking. International Women’s Day 2017, organising award nights and other programs using universities, banks and corporate bodies.

“There is an expectation that the girls will work as Development Officers in our Academies,” Dr Paiff said.

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EMMA DAVIES

EDUTECH, the only Australian event that brings schools, tertiary education, VET and workplace learning together, features eight parallel conferences covering the entire learning life-cycle, plus pre-event master classes for a more tailored and intimate learning experience.

The conference is aimed at educators, leaders and executives, managers and administrators, IT decision makers, system leaders, government and business.

Attendees are offered unparalleled networking with educators from across the country, exclusive access to some of the most well-regarded education experts in Australia and around the world, case studies from leading Australian schools, dedicated leadership seminar sessions for hands-on engaged learning, and access to Australia’s biggest educational technology exhibition.

Educators can even earn Professional Development points for attending.

Beginning six years ago as the Technology in K-12 Conference, EduTECH was born out of the desire to connect educators with practices that improve teaching and learning.

Many schools and educators struggled when the “One Child One Laptop” policy was introduced. Help was needed with device management, BYOD, network connectivity, WiFi, cybersecurity, software choices, hardware selections and tech support. The pedagogy and psychology of digital device usage accelerated in importance, and EduTECH was born.

The team at ACEvents worked to create and build an unprecedented international expo that celebrated and progressed learning. EduTECH has been described as the rock concert of education in the Southern Hemisphere, and its success has spawned satellite events in Asia and the Middle East.

EduTECH Dir. of Education Dr Megan Vazey is a Fellow of Engineers Australia and has a PhD in computing, an MBA, and first-class honours in Electrical Engineering. She was the founding STEM consultant with the Association of Independent schools in NSW, launching STEM and Digital Technologies into the national political agenda.

Dr Vazey says that for educational leaders at school, TAFE, University, in workplaces or communities, one of the most important lessons to learn and impart on others is being a learning person and being part of a learning organisation.

“Learning is innate and exciting. Learning allows us to adjust, adapt and improve. Learning generates ideas and possibilities, and creates progress,” Dr Vazey said.

“We have the exceptional fortune to be surrounded by technologies that enhance collaboration and communication in learning, but are we on the right track with these? Are we applying the right strategies, processes, tools and technologies, for best effect, in the best way? How can we push the boundaries, and go further?”

Dr Vazey describes the conference as an International Festival of Learning that aims to share the art, science and business of learning with a much wider range of students and educators, at much greater depth.

“As Head of Education for EduTECH, I work with a strong and experienced team to put the right people and organisations, on the right stage, at the right time, and thereby create a truly spectacular must-attend event,” she said.

Over three spectacular, invigorating and intensive days, EduTECH shares cutting edge approaches that are purposeful, meaningful, relevant and effective.

“We have all these amazing gifts in the people, technologies and resources surrounding us. How can we best support the communities around us through learning?” Dr Vazey said.

“Where can the selection and application of these amazing technologies mobilise and support communities in achieving the good stuff, including comfortable, happy, constructive, fair, and sustainable lives?”

“Regardless of whether it’s digital or non-digital, the motivated and focused application of technology is a powerful lever to improve learning. How can we achieve balance, so as not to lose students or educators to a virtual landscape?”

With a fantastic array of key speakers and master classes, EduTECH is attracting attendees and key speakers from around world and beyond, with Astronaut Greg Chamitoff, Professor of Aerospace and Engineering at Texas A&M University speaking at the event.

“EduTECH’s 2017 line-up is truly spectacular: Professor Carol Dweck is a must-to-see to unleash learning potential in ourselves and our networks. Greg Chamitoff will take you to the edge of your seat, with amazing feats of nature and humanity. We are bringing you Louise Stoll, Charles Leadbeater, Angela Maiers, Ian Jukes, Jan Owen, Philip Minchen, in one of the planet’s three largest gatherings of world leading educators,” Dr Vazey said.

“OVER THREE SPECTACULAR, INVIGORATING AND INTENSIVE DAYS, WE SHARE CUTTING EDGE APPROACHES THAT ARE PURPOSEFUL, MEANINGFUL, RELEVANT AND EFFECTIVE.”

The Masterclasses are a big draw card for attendees, with a variety of topics and expert presenters.

Dr Vazey believes there are trends appearing in education around professional learning communities, growth mindset, adaptive assessment, digital dashboards, wellbeing, inclusiveness, pedagogies to support creativity, feedback, student agency, and engagement.

“For campus ICT directors and managers there are Masterclasses on BYOD, Campus Wi-Fi, and Cybersecurity, to cover all aspects of setting up, managing, and securing your campus network at schools, TAFEs, Universities, community organisations and workplaces,” Dr Vazey said.

“For K-12 educators building upon the 21st century skills of communication, creativity, critical thinking and collaboration, we have Masterclasses responding to the Maker Movement, the new Australian Curriculum — Digital Technologies, and hands-on sessions with Makeblock, led by our International and UK Keynote Abdul Chohren.

“These tacit learning experiences activate and support whole-child and whole-school, as well as inclusive education goals.

“Our international expert Professor Jane Burns is delivering our Digitally Young and Well Masterclass, in which you will be able to connect with all aspects of digital wellbeing, and digital resources in support of wellbeing.

“In the business of constructive and creative thinking, Bill Jarrard will take you through Mind mapping. Further, Roger La Salle will show you how to achieve stronger student acquisition and marketing in your school, RTO, TAFE, University or other learning organisation,” she said.

EduTECH is well placed to explore current educational topics and potential challenges in Australia and globally.

When asked what her thoughts were on innovation, using technology in classrooms and particularly female teachers and students participating in Science Technology, Engineering and Maths (STEM) subject areas, Dr Vazey said that STEM is innate.

“We need science to understand how things work, engineering to make things actually work and that as a community we need to rethink sewing, knitting, tatting, dressmaking and food technology as fundamental engineering sciences,” she said.

“STEM is not just for boys or girls, not just for gifted and talented and not just for high school or primary school.

“Technology enables us to make things work better, and to make things in an even better way. Your gender might be male, female, in between, or even ‘apache attack helicopter’ as my kids say. It really doesn’t matter, we still need maths to underpin rational decision making in each and every field.”

“We work very hard at EduTECH to make the entire expo and congress content is inclusive. We hope this will become a reality for STEM in Australia too,” she said.

EduTECH International Congress and Expo runs from June 8th to 9th at the International Convention Centre in Sydney.
INTRODUCING SENTRAL

The leading integrated information management solution for your school.

Sentral is a premium end-to-end, school and student management software solution. Designed for web first, it’s available anywhere, anytime and on any device. Designed by teachers for teachers, Sentral is a mature and proven solution that is trusted by over 1,800 schools in Australia. Sentral Pty Ltd is 100% Australian owned and operated.

SENTRAL IS A SUITE OF INTEGRATED MODULES ENCOMPASSING*:

- Enrolment
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*Sentral integrates with and has importers for over 50 third party and corporate administration, finance, timetable, wellbeing, learning management and other related school systems for data exchange and migration.

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THE concept of Whole Brain® Teaching and Learning is based upon the distribution of specialised modes throughout the brain system. This metaphoric model of thinking preference was developed by Ned Herrmann and is divided into four separate quadrants.

In today’s world, learners do not have the patience or tolerance to be in a learning situation where they don’t fit, and will quickly check out. Think about your own delivery style and what types of thinkers it appeals to most. Is the delivery serving those learners who do not fit your style or the traditional teaching methods of your subject?

The Whole Brain® Thinking Model can be used to find ways to further stretch the design to be more inclusive of multiple thinking styles. Herrmann delivers proven tools and systems designed to increase thinking ability and diversity.

More information can be found at: www.herrmann.com.au.

The complete school information system

SENTRAL Education believes that every school is important. “Schools educate and nurture our most precious resource,” Sentral director Geoff Byers said. “We help schools provide the best education for every child in their care by developing great software that revolutionizes student management.”

Using Sentral, staff have ready access to data that informs teaching and learning, student and school administration through a comprehensive suite of 36 interrelated modules.

With Sentral, data is aggregated to paint a clear picture; it’s not isolated in different places or unconnected systems.

Integrated data reduces redundancy and replication, saving staff valuable time and making it available to all that need it, anywhere, anytime and on any device, Mr Byers said.

“The Sentral solution addresses the data demands of today and into the future as it continues to grow,” he said. “Task-based reporting filters that use selections from drop down lists mean school staff can get the data they need at any time without the need for specialist computing skills or a dedicated database administrator.”

“Anyone that can use an internet browser can use Sentral, our schools say ‘it just works.’”

Ready access to meaningful data means staff spend less time collecting and collating data, leaving more time to identify trends and take action.

Schools can also engage the community with targeted information to parents and students via the student and parent portals and native mobile app.

Historical data is always available within Sentral, allowing trend analysis over time for a student, class, year or the entire school. This becomes an increasingly powerful resource to inform executive planning and practice.

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“‘Our vision is to empower students and teachers to be the best they can,’ Mr Byers said. “The Sentral suite as a product and our dedicated teams of developers, education consultants, customer relations and help-desk staff work together to make that happen. That’s why we are the trusted solution chosen by 800 schools around Australia.

‘Talk to us to find out how we can help your school meet your goals and be the best you can be.’

More information can be found at: www.sentral.com.au.
SPACE is never neutral.
It impacts everything we do, whether our intention is to socialise, create and to learn; it influences the behaviour of those within it providing both opportunity and/or constraint.

The field of Learning and Teaching is becoming increasingly complex. It is harder than ever for teachers to be able to engage students, enjoy teaching - and ensure that constructive, valuable and worthwhile learning occurs. The learning space can either help or hinder your capability to teach and to learn.

Sebel Research Director Andrew Ford has spent the last 18 months talking to more than 2500 educators about their learning spaces; exploring what a learning environment should look like and how it should operate, informing the design team on furniture design to support the learner and the teacher.

Ford has come to realise that changes to the learning environment are now so significant that many assumptions relating to its design may be wrong and therefore, have a negative impact on teaching and learning engagement and long term outcomes.

For this reason, the concept of Space 2 Learn was born.

A free, non-partisan learning platform, Space 2 Learn is a social learning space designed with the teacher in mind, where educators and interested stakeholders can share what they know (and explore what they don’t) about designing learning spaces.

A panel of key contributors has been established. Experts within the fields of education, technology, psychology and design will share solutions and ideas discussing new pedagogy, behavioural management and the use of technology and space to create new, engaging and fulfilling teaching and learning experiences.

Ford will launch Space2Learn in June at EduTECH during his session A Space to Learn; for Every Type of Learner.

Register your interest by visiting: space2learn.org.
THE ANNUAL WAPPA CONFERENCE AND EXHIBITION HAS LONG BEEN EARMARKED AS ONE OF THE MOST IMPORTANT PROFESSIONAL LEARNING OPPORTUNITIES ON THE CALENDAR, THIS YEAR ATTRACTING MORE THAN 400 DELEGATES AND EXHIBITORS OVER THE THREE DAY EVENT.

IT PROVIDES A PLATFORM FOR HIGH LEVEL NETWORKING AND COLLEAGIETY OPPORTUNITIES FOR WESTERN AUSTRALIAN PRIMARY EDUCATORS LOOKING TO SPEAK WITH INDUSTRY LEADERS FROM ACROSS THE GLOBE.

THE PROGRAM INCLUDES STATE, NATIONAL AND INTERNATIONAL KEYNOTE SPEAKERS ADDRESSING THE CURRENT ISSUES AND NEW INNOVATIONS IN PRIMARY EDUCATION, WITH EXHIBITIONS AND EVENTS DESIGNED TO SHOWCASE THE LATEST TRENDS.

WAPPA PRESIDENT IAN ANDERSON SAID IT WAS A MUST ATTEND EVENT FOR ANY PRINCIPAL, DEPUTY OR ASPIRING SCHOOL LEADER THAT WISHED TO GAIN A SOLID UNDERSTANDING OF HOW TO INITIATE POSITIVE CHANGE AND FOSTER INNOVATION IN THEIR SCHOOL COMMUNITY.

"DELEGATES WILL LEAVE WITH FRESH IDEAS ON HOW TO ENHANCE PERFORMANCE IN SCHOOLS AND MAKE INNOVATION A CORE DRIVER OF STRATEGY AND CULTURE."

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FRESH IDEAS

The 2017 Western Australian Primary Principals' Association (WAPPA) Conference and Exhibition will be held from 14-16 June at the Crown Perth Convention Centre.

CAMERON DRUMMOND

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CAMERON DRUMMOND
WAPPA CONFERENCE

Banking with ANZ at work

AT ANZ, staff recognise and value the important relationship they have with the Western Australian education community. Employees that receive an income from a WA Government or non-government school, university, TAFE or other centre for learning enjoy offers as well as a range of helpful services by banking with ANZ through the anz@work program.

The program benefits are beyond just banking.
They start with a personalised approach with an A-Z Review.
The review is a complimentary one-on-one conversation, which includes identifying where a person’s life is now and where they would like to be, ensuring banking is a solution that’s tailored to each individual.
ANZ can provide onsite support for teachers and staff at local schools in WA where an ANZ representative is available for a personal meeting in relation to their banking, borrowing or insurance needs.
The onsite visit is a convenient way of banking, generally taking place during the lunch period, although meetings can be set up at any time of day to suit the individual school.
The process is simple with email communication including a link for teachers or staff to pre-book an appointment at their school on a particular day.
ANZ also provide access to a range of specialists, tools and information, which can help people make confident decisions about life’s moments, big and small; from LifeGuides that offer guidance regarding home, career, family and leisure as well as securing a person’s financial retirement.
More information can be found at www. anz.com.au.
Any advice does not take into account your personal needs and financial circumstances and you should consider whether it is appropriate for you and read the Terms and Conditions, Product Disclosure Statement and Financial Services Guide before acquiring any product.

Dream it. Print it.

SCIENCE IN SCHOOLS PAGE 69

EXCLUSIVE BANKING BENEFITS WHILE YOU WORK

Thanks to the relationship we share with the Western Australian Education Community, you can enjoy a range of exclusive benefits and discounts, simply by banking with ANZ.

With anz@work, you could receive exceptional benefits on your everyday banking, as well as extra support and discounts across a range of more complex banking products like loans, insurance and wealth management.

To find out more, visit anz.com/anzatwork or visit your local branch today.

To arrange for an ANZ representative to visit your school and support staff with their banking needs, email anzatwork@anz.com or speak with Dom on 08 6298 3001

Eligibility criteria, terms and conditions apply. Visit anz.com/anzatwork for details. Australia and New Zealand Banking Group Limited (ANZ) ABN 11 005 357 527. ANZ will collect your information in order to provide banking services. You can request access to, or correction of your information by writing to your local branch or by contacting the ANZ Privacy Office on 132 283.
NEUROSCIENCE AND EDUCATION
Enhancing all students’ capacity to learn

What do you do if students are not learning to their full potential despite your best efforts?

"Neuroscientists now understand why some students learn easily and others struggle, and what to do about it", Dr Martha Burns explains. (Dr Burns is an adjunct professor at Northwestern University, and she has authored more than 100 journal articles on the neuroscience of language and communication.) Dr Burns says that teachers are changing their students' brains 'every single day of the week' because of their brains develop and grow with use.

"Every time you ask a student to do a practice problem and they do, you are building myelin," Burns said. "You are making these fibre tracts more and more efficient. Teachers can also create new connections in the brain".

Neuroscience is a scientific discipline that includes a range of areas that explore, among other things, how the brain learns and what factors affect that learning. In the past 20 years, neuroscientists have gone from using primitive methods to understanding how to accelerate learning.

Learning capacity equals brain plasticity.

The ability to learn new things has a neurological basis as we learn, the brain changes. The brain changes involve new connections that form among brain cells - neurons - as well as chemical changes that enable those connections. Brain changes occur each time a person learns and retains new information. The term brain scientists use for this capability is neuroplasticity.

Neuroplasticity or learning capacity is known to vary as we age. In a young child, learning takes place without any effort. Researchers have shown repeatedly that the child does not need to be paying attention to speech; the brain organises on its own.

But, as any adult who has tried to learn a second language knows, learning to ‘hear’ the differences between speech sounds of second languages requires more effort. All humans have this neurological capacity to learn, but we are all at different stages of this learning process.

Attention technology:

It's called Nervanix Insight, and it's like a technology that helps students be aware of what's going on around them. Some of them can't because their brains are structured in a way that makes it difficult to focus on what they're supposed to do. Some of them can't because their brains are structured in a way that makes it difficult to process all the information.

Now there is an easy way to help them. Neuroscientists have used brain research to develop a simple, lightweight wearable technology that helps students be aware when their focus shifts and attention is distracted.

It's called Nervanix Insight, and it's like a FitBit for the brain. This new wearable attention training tool leverages the latest breakthroughs in neuroscience. It enables students to easily monitor their attention levels.

The Nervanix Insight neurofeedback attention technology:

• Notifies students when they ‘zone out’ or lose focus
• Dims the brightness of their computer, iPad or Android screen to prompt attention
• Alerts them to refocus the instant they lose focus
• Enables practice and training to improve attention skills
• Is easy to use because it’s so light to wear

Students use Nervanix Insight to develop their attention skills by practice and training while they do their regular work (no separate exercises to take time away from their usual learning activities). Teachers only need to encourage their attention-challenged students to use this educational neuroscience device a few times a week, and the technology will do its job. It’s easy for teachers.

How Does Nervanix Insight Work?

This innovative biofeedback tool helps learners stay more engaged by linking screen brightness to their attention levels. The stronger one’s attention, the brighter the screen. If a learner starts to ‘zone out’, the screen brightness automatically dims to alert the learner to refocus on the task.

Students are helped to master their attentional skills. This ‘FitBit’ for their brain also fosters mindfulness and metacognition, or the higher-order thinking, which allows a learner to understand, analyse and build control over their learning processes.

Like a FitBit for the Brain

"Pay attention!"

How many times in your teaching career have you told your students to pay attention?

You know your students learn more efficiently when they are paying attention. But a few don’t.

For other students, attending to the learning material and to hold on to newly learned information is easier than focusing on details.

Neuroscientists have demonstrated that all students exhibit different patterns of learning that equate to underlying cognitive capacities of attention, processing and sequencing. The stronger one’s attention, the brighter.

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Imagine if there was a way to improve how well your students learnt any subject?
Add one ingredient, thirty minutes per day. How would you make it fit so that you could shift the bell curve of results to the right?

It’s not changing teaching - it changes learning.

No change in curriculum content – just increases the chances of more of it sticking.

A 45-year research pedigree and 20 years of results proving that every time this educational neuroscience program is implemented correctly and completed it builds the learning capacity of the students.

When your students can learn better, more easily, and faster, your entire school results will improve – your results “bell curve” will move to the right.

In 2016, one NSW primary school had 146 students across grades 2 to 6 gain an average 14 months reading progress in 7 months’ use of this educational neuroscience program – double what you would normally expect.

A peer-reviewed paper from the Centre for Molecular & Behavioural Neuroscience, Rutgers University, USA (Rogowsky et al. 2013, Frontiers in Psychology) showed a group of university students who had Fast ForWord123 training for 11 weeks boosted their writing skills by 25%.

Fast ForWord123 helps students of all ages and abilities improve their learning capacity, including their reading and writing skills.

The communication skills for learning - listening, speaking, reading & writing - are all linked.
They are linked by language and they develop sequentially. Pre-schoolers develop their oral language (listening, comprehending & speaking). Then they use these building blocks of language in primary school to learn to read and write.

Students will find learning to read & write more difficult if they haven’t got good oral language competency. To read and write students must become phonemically aware – that words can be broken down into smaller units of sound (phonemes) and it is these sounds that letters spell.

A neuroscience-based program, Fast ForWord123, which improves listening, reading, writing and speaking, uniquely develops phonemic awareness and language skills at the same time as it builds the four cognitive skills for learning – memory, attention, processing speed and sequencing.

It also accelerates writing skills. A peer-reviewed paper from the Centre for Molecular & Behavioural Neuroscience, Rutgers University, USA (Rogowsky et al. 2013, Frontiers in Psychology) showed a group of university students who had Fast ForWord123 training for 11 weeks boosted their writing skills by 25%.

The results of this study demonstrated that a neuroplasticity-based computer training program, designed initially for younger struggling students to improve their basic cognitive, language, and reading skills (Fast ForWord), could successfully be implemented in a college setting to help college students with below average writing abilities rapidly achieve above average writing skills.

The researchers concluded: “The results of this study demonstrated that a neuroplasticity-based computer training program, designed initially for younger struggling students to improve their basic cognitive, language, and reading skills (Fast ForWord), could successfully be implemented in a college setting to help college students with below average writing abilities rapidly achieve above average writing skills.”

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How to “Shift the Bell Curve” of your School’s Results – it’s as simple as 123

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Leveraging teaching skills with neuroscience
This primary school used Fast ForWord123, a unique 3-component, evidence-based method for increasing students’ capacity to learn where English is the language of instruction. It blends the best of education technology with motivation from the “reward economy” to release neurotransmitters essential for locking in cognitive growth.

But its success relies on the third essential component - the commitment and skills of the teacher supporting the implementation. As one teacher at the school above said “the results of the students improved when my attitude changed – they had to engage and complete because I saw what could be possible if they did.”

Effectiveness proven by over 400 school case studies & published research papers

Fast ForWord123 is one of the most extensively researched and user validated educational neuroscience programs in the world, with more than 400 school case studies and published research papers testifying to its effectiveness.

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The Victorian Association of Catholic Primary School Principals (VACPSP) is a professional collegial body that leads educational dialogue and initiatives to enhance Catholic Primary School Principalship.

VACPSP advocates on behalf of Catholic primary school principals; focuses on collegiality support for principals; fosters a dialogue with education authorities, Government, parents and other educational professional associations; and supports the enterprise of Catholic primary schooling.

VACPSP is the referring body for issues raised by members, liaises and advocates with all relevant organisations on behalf of Victorian Catholic Primary Principals in all professional and operational issues that affect the day-to-day management of their schools.

The Association provides opportunities for collaboration and professional discussion among Catholic Primary School principals and holds regular meetings across Victoria with Catholic education directors and Association members.

The biennial conference is the cornerstone of the work VACPSP does, and offers an opportunity for Victorian Catholic Primary School principals to come together to learn and network.

This year’s conference had attendees exploring the conferences’ theme of ‘Courage is Key – do the thing you think you cannot do!’, a quote by Eleanor Roosevelt. Catholic Primary School principals in Victoria are facing challenging situations every day with enormous workloads and extreme pressures. Principal health and wellbeing is a major focus of the VACPSP.

The conference brought together a range of experts in their field that had faced adversity and found a way through. Delegates were able to hear methodologies that they could implement at their own schools to lift performance levels, change cultures, and create or renew energetic environments.

The objectives for the conference were to have a series of key note speakers presenting to all the delegates together. The presentations included adult learning principles of engagement, shared discourse, Q&A, visual presentations, and strong links to the theme of courageous leadership.

“This year there was a richness in the speakers and that [led to] really good professional learning.” VACPSP President Michael Gray said.

“I think that they all tapped into that domain of the social-emotional, not the technical aspect of leadership. We did not focus on management or the skills of educational leadership; rather mindset and courage.”

“Many principals can gain the technical aspects in many other ways, such as study, on the job training, and system briefings. I think we know these things otherwise we wouldn’t have the jobs we have. This year’s conference was about the passions and burning desires to make a difference that are at the core of inspiring leadership.”

“I think that some participants were in...
need of hope and something to believe in again after the effects of the past few years and the Royal Commission into Child Abuse. “I have had feedback relating to that. “I think people went away inspired and that’s a good thing for their wellbeing and for their leadership."

VACPSP aimed to present authentic, quality and world recognised speakers with a dynamic range of world views, new thinking, and a positive mindset. Key speakers included acclaimed Australian educator, speaker and coach Brendan Spillane, Emergent chief executive Holly Ransom, Semann & Slattery director and founder Anthony Semann, and experienced educator Hugh van Cuylenburg.

Speakers also included ‘Socialpreneur’ Peter Baines; Social entrepreneurs and founders of the Orange Sky Laundry Nic Marchesi and Lucas Patchett; as well as Geelong St Mary’s Parish Priest Father Kevin Dillon, a finalist in the Victorian Senior Australia of the Year award for his work with survivors of abuse.

“You have to have well educated, well informed, confident leaders if you want good schools that are well led,” Mr Gray said. “The role of principal is vital in a school. It can make or break it” he said. International business and educational research supports the importance of leadership in learning and safety outcomes for students. “Persistence is the key to success and we need to think in the long term, not the short term with change.

“Catholic principalship is powerful and must always be held as a privilege. “We are serving others and we work in a sacred place.”

On the cards for the next conference in 2019 are what Mr Gray considers upcoming trends in education, including agile hope filled leadership; awareness of the world that students are entering when they leave schooling; cultural diversity and shifting values systems; technology; social relationships; and engaging relevant curriculum for young people.
Be a “big picture” expert teacher

There needs to be greater commitment to recognising excellence and teacher expertise. However, as Professor John Hattie says in lectures on his book Visible Learning, there are few goal posts in professional learning and we allow others to define what new policy or fad will underlie the content of professional development.

LIONEL CRANENBURGH

PROFESSOR John Hattie is reported as saying that teachers waste time looking for the “magic bullet” and debating things that don’t matter. I found much of the formal professional learning for Level 3 Classroom Teachers to fall woefully short of engaging teachers in deep and active learning.

I will use some of Hattie’s research in Building Teacher Quality and Visible Learning to guide Level 3 Classroom Teachers in WA applying for Stage 1 in May 2017 in a two-part “master teacher” selection process and for others seeking Lead Teacher status. Data obtained from the WA Department of Education shows that overall 44 per cent of teachers achieve Level 3 Classroom Teacher status, a process that began in 1997.

My principle for anyone aspiring to Level 3 is to obtain the best guidance you can from an expert individual coach that is able to bring resonance.

Formal professional development has limited value when delivered to large groups. I advocate that good professional learning involves planning and an active approach to learning.

I encourage aspirant Lead Teachers to engage in self-evaluation and seek feedback; Hattie’s research shows is one of the best strategies for improvement. You need to ask: Where am I going? How am I going there? What do I do next?

Bill Gates says: “I think its very important to have a feedback loop, where you constantly think about what you’ve done and how you could be doing better”.

Analysing the WA Department of Education’s Level 3 Classroom Teacher Guide, attending formal workshops that analyse the indicators, and reading colleagues’ portfolios are activities providing surface-level information, which by themselves, play a small role in securing Level 3 Classroom Teacher or Lead Teacher status.

I suggest that you become an active learner, applying a cyclical process using the feedback loop and Visible Learning. You should use continuous self-evaluation, seek the best expert evaluation and individual help, set goals, plan, implement planning, manage time and continually self-monitor progress.

Your mind frame is what sets you apart as a Level 3 or Lead Teacher and research shows that you need to focus on your learning and the impact it is having on colleagues and students. Positive school leaders talk about learning rather than teaching and engage in the challenge of learning.

Your self-evaluation will lead you to analyse the indicators in each Competency for Level 3 Classroom Teachers and select examples that are complex, challenging, reflect a big picture vision and demonstrate each aspect of every indicator.

Your examples should reflect policy, planning, research, curriculum and pedagogy.

The big picture secret is to ensure that you have examples and evidence that impact on the whole school, involve networking with other schools, and show you on whole-school, system or regional committees.

Take a big picture approach using the BEHAVE process to engage colleagues. Identify the target behaviour you want to address, explain your expectations to the team, have a clear process, act it out consistently, value the skills that your new project provides and expand its influence by sharing it across the school or other schools.

Collect evidence for your portfolio and ensure that you present your findings to groups continually seeking feedback.

You will be recognised as a big picture champion of change.

Lionel Cranenburgh is the 2015 Positive Behaviours Winner (WA) and Director of Lionel Cranenburgh Associates, Career Company. lione@lionelcranenburgh.com.au

Educating with Neuroscience Conference 2017

LEARNFAST Group is the leader in applied educational neuroscience in Australia, New Zealand and Oceania.

The inaugural Educating with Neuroscience (ENS) conference was held in Melbourne in 2016 and was so successful that it has expanded to three cities in 2017.

Principals, school leaders and teachers will learn about the latest educational neuroscience research at ENS 2017 and how it is being applied to pedagogy and in schools around the world.

Educational neuroscience also offers new ways of looking at the learning problems teachers grapple with every day.

When educators understand how the anatomy of the brain works and link this to how students learn, they are better equipped to effectively deliver curriculum in their classrooms.

The conference brings together world leading neuroscientists and education experts, with key speakers including Dr Steve Miller, Cheryl Chia, Devon Barnes and Dr Tanya Vaughan.

Dr Miller is a neuroscientist and educational technology innovator who has extensive experience teaching at university, and researching neuroscience and cognitive neuropsychology, including large multi-site research initiatives on the neural basis of brain plasticity and learning.

Dr Miller has co-authored more than 100 publications including numerous research studies, commercial software programs and U.S. Patents.

Cheryl Chia is an accomplished paediatric physiotherapist and the founder of BrainFit, an entity that specialises in scientific brain development training for children.

Ms Chia holds a Master’s degree in Physiotherapy Studies (Paediatrics) from the University of Queensland and, after being awarded a full scholarship from KK Women’s and Children’s Hospital, was conferred membership in the Golden Key National Honour Society in recognition of her outstanding scholastic achievement and excellence.

Key speakers also include Devon Barnes, who has almost 50 years’ experience working as a Speech and Language Pathologist with children and adults with speech, language, literacy and learning problems including dyslexia, auditory processing disorder and autism spectrum disorders.

Ms Barnes is frequently invited to speak at Australian and international conferences and often presents to schools on the neuroscience of learning, learning difficulties, and young minds under stress.

Dr Tanya Vaughan is one of the developers of the Teaching & Learning Toolkit, Associate Director of Evidence for Learning at Social Ventures Australia, and Honorary Fellow in the Melbourne Graduate School of Education at the University of Melbourne.

The Teaching & Learning Toolkit is a free online summary of educational research, designed to inform practice by identifying the most effective approaches to improving student attainment.

The Toolkit references up to date international and domestic research and applies it in an Australian context, with a global evidence base on 34 different approaches to lift learning outcomes in schools.

The conference promises to be a valuable forum for discussing the latest educational neuroscience research and how that research has been translated into practical tools for educators.

The Educating with Neuroscience Conferences will be held in Melbourne on the 10th of August, and Auckland on Monday the 14th of August.

For more information visit: www eens2017.com

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Huge range of courses at TTA

TEACHER Training Australia (TTA) has been operating for 11 years and has run more than 5000 events attended by more than 36,000 teachers and school leaders in both face to face courses and online.

“When I started TTA, my goal was to see more of Australia’s innovative and passionate teachers sharing their expertise with others,” TTA founder Miles Campbell said.

“When this happens, everyone wins. Most importantly, the kids in the classrooms throughout Australia win,” he said.

“We are always on the lookout for standout educators who want to share what they have developed.”

The majority of course presenters are practicing teachers and TTA encourages any teachers interested in sharing their expertise to get in touch.

With TTA’s trusted transparent feedback system; attendees can be assured the company strives to meet their professional development needs.

“I’m a presenter with TTA and have two online courses Teacher Wellbeing Toolkit and Mentoring Made Easy,” Teacher Wellbeing director Daniela Falecki said.

“Both are six NESA hours and offer teachers practical ways to learn with flexible hours.”

“What I love about facilitating these is that I and other teachers in the course get to hear personal insights from people about their own experiences and what is happening in their schools.

“Often teachers think they are alone in their schools, so by creating an online learning community, people begin to recognise there are others who are either worse off than them or they see options for other ways they can be.”

Ms Falecki said participants have commented that the content is relevant; the activities are practical, the videos insightful and the optional readings useful for future reference.

The online platform also provides participants with hyperlinks to resources they can use in their classrooms, adding to the time-efficiency required by teachers.

“The TTA online platform brings together expert educators with teachers who may not have access to face to face professional development,” she said.

St Andrew’s College Marayong teacher Amy Wallis said the online collaborative course she completed - presented by Richard Andrew - helped her make sure she was using best practice.

“The quality of education I provided definitely improved after I implemented the online course,” Ms Wallis said.

“Students were able to pace their own learning to suit their own needs.

“They were able to re-watch, re-learn and have access to the learning all the time so by the time they got to the end of the unit they had mastered all the skills and concepts that they needed to.”

Ms Wallis also completed a motivating and engaging students course which she believes assists her to interact with students on a personal level.

“The two of them together created a really well rounded classroom where we were engaging really positively online and offline and students were responsible for their own learning at the same time,” she said.

“This online course has allowed me to help the students at the bottom end but also stretch the students at the top end.”

More information can be found at: www.tta.edu.au

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The 21st century school

The modern learning environment is expanding beyond the classroom walls. Seamlessly integrating the latest designs and technologies, these flexible workspaces spill out to the school grounds and incorporate sustainable design to drive down costs and reduce energy use.

ELIZABETH FABRI

SCHOOL infrastructure is a fundamental pillar for a student’s success in schooling. “We are all impacted by our environment,” Association for Learning Environments Australia past-chair and architect Richard Leonard said.

“Churchill’s oft-quoted remark that ‘we shape our buildings and thereafter they shape us’, holds true.

“In contemporary education models, we often see the older style school buildings – especially the ‘cells and bells’ models – getting in the way or even preventing more innovative teaching and learning approaches.”

The Australian school system is evolving, steering further from the 18th century “industrial model of education”, and responding to the needs of a changing curriculum in which technology and collaboration are at the fore.

“Recently, more progressive approaches to education have led to a very significant re-thinking of the environments that support them, especially in the Australian context,” Mr Leonard said.

“In the last 10 years or so, we have really witnessed a dramatic shift in many learning environments towards more purposeful learning settings, supporting the more contemporary teaching and learning pedagogies.

“These environments are typified by providing a rich variety of seamlessly inter-connected spaces for small groups, large groups, one-on-ones, collaborative activities, multi-media functions and are both internal and external – a far cry from the ‘cells and bells’ approach of traditional classroom settings.”

Electronic whiteboards are starting to replace the static blackboards and whiteboards of the past, acoustic partition walls and movable furniture are creating more flexible work spaces, wireless network integration and a ‘bring your own device’ model allow students and teachers to be connected at all times, and new facilities such as STEM focused buildings and wellness centres are sprouting up across a number of schools.

Learning is not confined to the classroom, sprawling out to all areas of the school, incorporating intelligent design to promote critical thinking.

Interestingly, the Programme for International Student Assessment (PISA) PISA 2015: Reporting Australia’s results published by the Australian Council for Educational Research highlighted the importance of school buildings to learning, stating many principals believed inadequate or poor quality physical infrastructure to have hindered their capacity to provide instruction.

“34 per cent of principals of students from disadvantaged schools compared with 12 per cent of principals of students from advantaged schools identified this as an issue,” it stated.

The statistic also illustrated the division between independent schools with flowing funds and lower socio economic schools relying on government support; an issue that had become even more heightened with the rapid pace technology was advancing.

Specialists in educational construction

QUASAR Group is a leading provider of educational construction more than 20 years of experience across Sydney and Regional New South Wales.

The company offers a fully integrated project management and building service from design through to delivery.

The wealth of knowledge garnered through delivering more than $300M work of educational projects has positioned Quasar as a sector specialist and industry leader.

In 2016, Quasar Group won the Master Builders Association Excellence in Construction Award (Educational builds up to $20M) for the Meriden Anglican School for Girls.

“We delivered a complex sporting facility which has a state-of-the-art tennis centre that is rated for international tennis competitions,” said Business Development Manager James Gwyne.

The Meriden project included external sporting facilities with tennis courts, gymnasium, training spaces, and external sporting facilities of additional tennis courts and netball courts.

“No not only is the schools utilising the spaces for competition, but international tennis players have been calling it home for training when they come to Sydney,” he said.

The Quasar Group prides itself on the high percentage of repeat customers across all school sectors, but predominantly private schools.

The company’s extensive subcontractor base enables cost-efficiencies and premium quality.

“Our point of difference is our thorough understanding of the processes and protocols of delivering within the live and sensitive school environment, safety for us in non-negotiable, as the 2015 MBA Award for Safety attests,” said Mr Gwyne.

Quasar is currently engaged in 3 educational projects and looking forward to expanding this portfolio in 2017.

For more information visit www.quasargroup.com.au
SUSTAINABLE DESIGN

Sustainable design was undoubtedly a trend schools were getting behind.

Recognising that funding is often limited, architects and builders looked at innovative ways to initiatives into buildings – longer terms and reduce emissions, while enhancing the learning experience.

Devices such as solar panels, water collection and air quality control systems played a dual role as a sustainable design feature, while acting as a learning tool for students.

At Cathedral College Wangaratta in Victoria for example, a feature trombe wall took up the role of heater in the Environmental Science Laboratory, giving students the practical experience of being kept comfortable by the building itself, rather than solely relying on air conditioning.

“Across the college, solar panels feed back into the grid and storm water feeds the school’s toilets,” Cathedral College principal Adrian Farrer said.

“A Science Garden yields vegetables, herbs and eggs for the kitchens, but also features a windmill and wind turbines,” he said, “and other projects constructed by students in our Materials Technology area.

The practical skills practiced in these environments complement the integrated technologies each room has access to; something vitally important in the digitally rich world in which our students exist.”

At Hillbrook Anglican School in Queensland, the school recently undertook a refurbishment to ensure the entire school was future-proofed, with architects paying close attention to the educational climate for the students.

“At Kings Christian College in Queensland, the early learning spaces also comprised of work they get through in class, and their change in students’ behaviour, the amount of work they get through in class, and their concentration levels since using the new furniture,” Swan View Senior High School principal Meleshia Sands said.

“The moving stools - akin to a swinging chair - keep our students on task, especially our boys.”

THE MODERN CLASSROOM

The traditional classroom blueprint was also transforming, with architects paying close attention to how schools could be designed to support the teaching methods of today and tomorrow.

“I think the interesting issue that the emerging technologies have brought is a shift from the ‘hard’ systems – the physical infrastructure supporting technology, to more emphasis on the ‘soft’ systems – the methods of teaching and learning,” Mr Leonard said.

“For example, as recent as about a decade ago, IT Classrooms were being promoted as the primary building response to technology; that is, providing a classroom for students to learn how to work with the technology.

“But now, we don’t see those rooms being required anymore.

“Computer rooms are now ‘white elephants’ – all the information can now be stored and accessed on personal mobile devices.

“Similarly, the infrastructure of the green screen facilities is required even less; although the facilities dedicated to video recording remain useful, students can also produce a video using their smart ‘phone’.

“Schools were also installing technologies that facilitated videoconferencing with other campuses or schools and institutions, both nationally and in other countries.

“These installations represent a virtual reshaping of schools, and a virtual disintegration of the bricks and mortar that traditionally define schools,” Association of Heads of Independent Schools of Australia (AHISA) chief executive Beth Bladwin said.

Now school classroom design typically involved smaller hubs with break out spaces for group activities, furniture that could be reconfigured to suit the class needs,” Peter Carney Anglican Community School principal Felicity House said.

“Any building being planned today will be due for a half-life refit by around 2050.

“Can’t wait until 2050 to design carbon neutral schools, we need to start now and schools should be at the forefront of this initiative.”

Mr Leonard said the challenges for schools today were “enormous”, from ageing facilities to entrenched traditional attitudes of what a school should be like by conservatives parents.

“All too often, all the parents want is simply a slightly better version of their own school – but very much the same model because ‘it was good enough for me’,” he said.

“Yet these old-world views will not serve our students well and will not adequately prepare them for their futures.

“So, the biggest impact we can have is the shift in mindset; to agree that change needs to be made and that such change needs to be significant.”

At an institutional level, the emergence of vertical schools in high rise buildings, was a modern solution for schools in high-density areas.

“In the inner urban areas we are responding with schools on smaller sites, that form community hubs, that co-share with municipal infrastructure (libraries, ovals etc) and that are re-imagining the model of a 21st century school,” Mr Leonard said.

“If done well, it’s a positive outcome for both students and the community.”

The Federal and State Governments remained committed to improving infrastructure across both government and independent schools, through a string of capital grant initiatives.

The Turnbull Government’s Capital Grants Program (CAGP) provided funds for non-government schools, in accordance with its guidelines, to purchase land with buildings, assist with planning, erection of buildings, alteration extension, refurbishment or demolition of a building, and upgrade of facilities.

In Victoria, the State Government also heavily invested in new schools, school buildings and more than 1000 school upgrade projects through a $2.4 billion investment in infrastructure, while in South Australia, the department recently invested $250 million to refurbish and redevelop school facilities to provide STEM learning hubs.

Reflecting on the funding available, Mr Leonard said while the education system could never say enough was being done, Australia like all countries lived in a world of finite resources, political change and necessary compromise.

“The recent projections of the Grattan Institute predict enormous increase in student numbers in the next decade across Australia,” he said.

“The Grattan Institute projections translate to the require ment for 765 new schools within a decade.

“So, the real issue here is to ensure this massive roll-out of new school infrastructure across Australasia provides the very best foundation for teaching and learning into the 22nd century.”

Mr Leonard said the figures, as astounding as they were, only related to new schools and it was existing ageing infrastructure that also required attention.

He said Australia had to think smart to strike a balance between building new schools to accommodate the growth and ensure existing schools were not falling behind.

“While recognising that we’ll probably never, ever have enough money, at least we can ensure that what we do has maximum impact and is the most cost-effective,” he said.

“To design and operate contemporary schools, we simply must know what works and what doesn’t so that the money we spend in developing innovation education facilities is well targeted.”
Flexible learning spaces

Harbord Public School in Sydney’s northern beaches, home to 1152 students and 45 teachers, recently underwent a major capital works program to upgrade school facilities.

EMMA DAVIES

THE New South Wales Government’s $13.5 million upgrade of Harbord Public School consisted of constructing 18 new classrooms and library facilities, reducing the number of relocatable classrooms and supporting contemporary teaching and learning practices. Work commenced in November 2015 and the construction of the new facilities was completed in time for the first day of school in January 2017.

“From the very beginning of the project, we undertook to develop a set of school specific principals to guide the project design,” Harbord Public School principal Craig Davis said.

Project architect Cathy Kubany and her team incorporated and translated these principles into the building design.

“Our senior students were asked what they wanted from a classroom environment and informed the design team of three essential aspects they to be central to the build; natural light, comfortable seats and space to learn,” Mr Davis said.

“We reviewed research around contemporary learning and built pedagogy (physical space). In retrospect, our flexible learning spaces were influenced by the research around ‘built pedagogy’ shaping teaching and learning,” he said.

“In this way, flexible learning spaces, coupled with flexible furniture, were a clear signal of our intent to do things differently in this environment.”

The majority of the flexible furniture was designed and manufactured by Australian educational furniture company NorvaNivel. The school was hopeful that such a flexible space would influence the way in which teachers and students interacted; allowing for increased creativity, student engagement, support differentiation, and collaboration and communication among teachers and students.

Prior to the upgrade, Harbord staff had been experimenting with modifying the learning environments, de-cluttering and removing some of the unnecessary furniture, and staff encouraged students to be flexible in their approach to learning.

Mr Davis said the two school deputy principals, assistant principals and teachers established a focus network to disseminate and share professional reading around current research, built pedagogy, and contemporary teaching and learning practice.

“One of our assistant principals undertook the lead in change management plotting our course as to the changes staff and student might expect and how to negotiate this change. Discussions around student management, teaching methodology, management of resources to how best to manage the transition of some 500 hundred students and 18 members of staff into the new facilities,” he said.

“Generally, the students have really adapted exceptionally well to the new structures. Like any shared working space we have clear and specific expectations established to maximise learning behaviour,” Mr Davis said.

“The furniture is designed in such a way as to allow the learning environment to be manipulated making it changeable and fluid.”

With flexible learning spaces purpose built for students’ engagement and teacher’s learning technique; Harbord Public School is well placed to be providing excellent education in the community for years to come.

“The students are thoroughly engaged with the learning environment and appear to enjoy the opportunity that the learning commons provide. From my perspective, the students appear much happier at school and levels of student engagement levels are improving,” Mr Davis said.

“The new facilities have provided a fantastic opportunity to reflect upon and even challenge our teaching and learning practices.

“The NSW Department of Education has designed and built an innovative and modern facility that reflects the educational principles expressed by the school.”
HOW can we better equip students for the skills of the future? It’s a question that drives the employees of NorvaNivel every day.

Founded and headquartered in Australia, NorvaNivel was born out of a need to help further the education revolution by designing and manufacturing furniture that disrupts traditional education paradigms.

From the non-tessellating shape of the original Cloud Table to the uniquely light and easily moveable seating designs, all that NorvaNivel creates is designed to better facilitate student-centred and future-focused pedagogies.

Working from the principles of design thinking, every product meets a specific need; whether it’s informed by research, collaboration with educators, or insights gleaned from observing students in learning environments.

This approach is also conducive to the company’s forward-thinking designs that support the needs of schools today and into the future. NorvaNivel was the first in the industry to design a range of STEAM-focused furniture.

NorvaNivel has worked extensively with government schools like Harbord Public School in Sydney’s Northern Beaches, as well as private, independent and Catholic schools across Australia.

While the company has partnered with thousands of schools locally and internationally, NorvaNivel provides a personalised and collaborative consultative approach to customers. This ensures that all customers achieve their desired objectives for their space, pedagogy, and learners.

The process includes space planning and 3D renders to help maximise space and budget.

NorvaNivel locally designs and manufacturers its products and is committed to sustainable and responsibly sourced materials. To learn more about how NorvaNivel can transform your learning environments, visit www.norvanivel.com.au.
STUDENTS and teachers alike have proved the long-standing benefits that fresh, hygienic and safe washroom facilities provide, however these areas are still commonly overlooked in education environments when schools are considering renovations.

Bullying and harassment often occurs in school bathroom areas, where lighting is poor and the fit out is deteriorating.

This leads students to either use the facilities during class, not at all, or in the worst-case scenario miss school altogether, each of these situations present detrimental flow on effects to student learning and behaviour, emotional and social development and their overall school experience.

Whiteson Group are a team of renovation specialists who work with schools to determine the best possible upgrade solution for your school bathrooms, boarding house bathrooms and staff toilets.

With 35 years’ experience upgrading commercial bathrooms and a substantial portion of these being in educational environments, they can guide clients through their project from concept to completion; transforming spaces into the hygienic, safe and pleasant facilities the students deserve.

Upgraded facilities will boost a school’s image no end, and it will help put parents at ease, knowing their children will be safe when they are considering enrolment.

Whiteson Group specialises in renovating and rejuvenating schools.
Modular buildings to suit any budget

BLUESKY Modular Buildings, based in Camden NSW, has more than 19 years experience in design and construction, installation, administration and providing excellent quality and prompt service.

The team has extensive experience building for various clients in industries such as mining, construction, pool cabins, holiday homes, and classrooms for education.

As part of its customised services and appreciation that building designs and requirements come in all shapes and sizes, the company offers no-obligation quotes for any project.

Blue Sky Modular Buildings is committed to quality service.

From initial enquiry to the handover of the keys, the company provides the highest level of service in the industry regardless of budget or project size.

During all stages of construction and installation clients receive daily emails with photographs updating them on the project’s progress and upon completion, an operation and maintenance manual.

The company offers prompt delivery and installation services, including piers and footings completed by an installation team on site on the weekends and outside school hours; all while the building is being built in the factory by its experienced tradesmen.

With trades working together in the custom designed factory, the company can build up to 50 per cent faster than traditional construction methods.

This enables them to accurately estimate production and completion times, and keep clients up to date throughout the process.

Blue Sky Modular Buildings can have a building installed and ready to use within one to two weeks faster than the traditional six to eight month build, saving clients both time and money.

Blue Sky Modular Buildings chief designer and master builder Ben Sheedy believes excellence is never an accident.

“It is a result of high intention, sincere effort, intelligent direction, skilful execution and the ability to see obstacles as opportunities,” Mr. Sheedy said.

Blue Sky Modular Buildings aims to provide excellent service and sustainable, high-quality modular learning spaces which suit your needs.

More information can be found at www.blueskymodularbuildings.com.au.

“Wow, is that what you build? Tell me more!”

BUILDING MODULAR CLASSROOMS AND LEARNING SPACES FOR THE FUTURE

• Accelerated project time lines as they are built off-site
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Convenient modular classrooms without compromise

FROM primary and secondary, learning spaces to childcare and preschool facilities, Black Diamond Group has become a leader in providing premium, full-turnkey modular building solutions for one reason they find a better way.

Black Diamond Group works with school decision makers to provide flexible, functional, inspiring classroom and learning space solutions that keep the focus on learning.

The company’s classroom range includes technical and advanced facilities such as science laboratories, woodworking and metalworking.

These buildings are architecturally designed, durable and custom-built in a controlled factory environment to ensure they meet all required building codes and standards.

Whether clients need to integrate with existing facilities or create new ones, Black Diamond Group has a wide range of finishes and features to match clients needs.

Classroom complexes can be expanded or decreased in size, added onto existing non-modular buildings, or relocated.

The company’s modular classrooms offer time and cost saving advantages over traditional-built projects, since construction and site preparation take place at the same time.

Classrooms can be installed when convenient, such as over school holidays, and as most construction occurs off-site, student safety is increased.

Available for hire, lease or sale, these flexible, temporary and permanent building solutions can be configured to suit specific needs.

More information can be found at www.blackdiamondgroup.com.au.

Modular classroom solutions provided by Black Diamond Group.
FLEETWOOD is a national market leader in the design, manufacture and installation of modular buildings and transportable homes.

For more than 30 years, Fleetwood has serviced the education sector throughout Australia, working closely with Government, and private and religious education departments to develop its range of single and double storey classrooms customisable to climatic, curriculum, and student population requirements.

Fleetwood offers a range of learning spaces to suit both primary and secondary schools, with classroom designs that can be adapted to any space to provide the best learning environment for students.

A school’s student capacity can often fluctuate and the need for extra learning spaces may be required.

Fleetwood’s modular classrooms offer schools an efficient and affordable learning space solution with new and second-hand transportable classrooms available for immediate purchase, lease or hire.

Classrooms are manufactured offsite in a controlled factory environment, ensuring onsite disruptions are minimised and quality is of the highest level.

Services include new primary and secondary school developments, single and multi-storey classrooms, day care centres, sports facilities, library and administration buildings and student accommodation; all of which can be transported anywhere within Australia for installation.

Fleetwood can provide all the necessary design, development, manufacturing, transportation and installation requirements in metropolitan or regional areas.

Working in collaboration with clients, the project and construction teams will develop an approach that meets project specific requirements so anomalies and risks are mitigated.

Fleetwood’s modular classrooms give schools the flexibility to customise the floor plans and interior design configurations to accommodate student’s education and study requirements.

A modular science lab, economics rooms or library can be a temporary solutions or permanent expansion to school buildings.

The company also offers a range of modular administration offices and staff buildings including staff lunch rooms, meeting rooms, first-aid buildings, facilities and maintenance utility rooms.

Services offered include the design, manufacture, delivery and installation of the buildings as well as external works including walkways, stairs, ramps, landscape works and external structures.

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THE RIGHT CHOICE FOR THE NEXT GENERATION

- New Primary and Secondary School Developments
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BUILDING INNOVATIVE MODULAR SOLUTIONS FOR THE EDUCATION SECTOR ON A NATIONAL LEVEL

WEST COAST: 1800 199 100 / EAST COAST: 1300 123 272 www.fleetwood.com.au
BASED in WA, Quality Builders is a family owned company with more than 40 years experience in transportable building construction.

In 1984 the company won its first project for the supply of transportable school buildings, and has since become the main supplier of transportable buildings for the WA Department of Education.

Quality Builders has been instrumental in the structural design and finish of the buildings and has been the major supplier for transportable classrooms to the education department and Catholic Education of WA.

The team has a wealth of knowledge and abilities in the field of transportable construction and has assisted many architects and consultants to ensure clients projects are well designed, constructed and fit-for-purpose.

The company has constructed GLA classrooms, pre-primary classrooms, science classrooms, manual arts classrooms, administration buildings, toilet facilities, disabled toilets, home economics classrooms, early childhood facilities, catholic education classrooms and lecture rooms.

All buildings are designed and manufactured at the company’s premises in Perth and transported to site for final completion, allowing architects, engineers and other consultants to complete the necessary inspections during construction, and provide an extremely high standard of finish.

Quality Buildings has successfully completed the construction of classrooms and transportable buildings throughout WA, working in remote areas such as Kalumburu, Warburton, Giles, Balgo Hills and Eucla.

There are only a handful of towns in WA that don’t have a building constructed by the company.

In the past few years, Quality Buildings has also established a business to relocate the transportable buildings and classrooms for the WA Department of Education and have completed many relocations and renovations of these classrooms.

In 2016, the company completed a total of 107 classrooms for the Education Department between September and December.

Quality Builders has the knowledge, experience, staff and expertise to design and construct any transportable building from the simplest GLA classroom to complex science rooms.

More information can be found at: www.qualitybuilders.com.au.
The decline in libraries and print books is critical but the main issue is the loss of trained teacher librarians who would engage students with literature, and are a resource for the whole school.

"Once you don’t have a trained person in the library, you don’t have someone who’s experience in collection development, so they can’t build a collection of books, and you’ve got no one there as a resource to teach that love of reading," Mr Susman said.

"A good librarian has the pulse of what’s happening in curriculum; what are the changes in curriculum, where can materials be inserted, how to train teachers and students to access relevant materials, to make them independent quality learners."

"Schools have gone from employing teacher librarians to librarians who have one degree, not two, or library technicians who are trained for cataloguing but are not qualified teachers."

"The other role of the library is teaching students how to learn," he said.

"Teachers in their normal teacher training don’t learn the processes of research and it’s really critical in an era where we have Trump and ‘false news’, it’s very scary." While Google can be an excellent resource for particular kinds of questions (who, what, when, and where), the problem was that middle school students were starting to ask the ‘how’ and ‘why’ analytical questions and Google can be the worst place to go.

Mr Susman pointed to the free resources on the internet as the reason behind the decline in print books, and there were serious consequences to using them.

"People who have quality information sell it," he said.

"It’s worth something; professionals pay to get access to professional databases for example, universities spend hundreds of thousands or millions of dollars to get good, quality information."

"If you Google the Holocaust, about the fourth or fifth thing that comes up ‘proves irrefutably’ that the Holocaust never happened!"

"So we have students who are putting that kind of material into assignments and teachers who don’t know how to teach a really critical thing, which is how do we actually verify the sources, are they credible, are they authoritative?"

"You can’t just Google something and expect to get the truth."

"There’s lots of that around and the universities are absolutely distraught over the last 15 or 20 years that the quality of research done by students that come in to university has declined dramatically, to the level that it’s causing huge problems at university."

As the role is declining, Mr Susman was concerned about who in each school will be responsible for helping students learn how to learn and engage with quality resources and materials.

"It’s more critical than ever for young people to actually learn that there is no such thing as truth; all you can do is compare lots and lots of different sources of information," he said.

"The most important thing is verifying information and we’re now creating a generation of students who have no idea how to do that."

"Students need to learn how to navigate a range of resources and media to become informed citizens and lifelong learners, knowing how to effectively use databases & e-book research is critical for those who will go on to Tertiary studies."
A sound environment

When designing classrooms, schools can get carried away with the aesthetics and cost of the build, which often makes key features such as acoustics an afterthought. While some schools go above and beyond in creating acoustically friendly environments for students, there is still room for improvement.

ELIZABETH FABRI

“Perhaps there is a class of students walking down the corridor and noise from that activity might get into the classroom and disrupt the teaching process once again.”

“Students, in particular young children, require good listening conditions; this is known as having a high signal-to-noise ratio - the teacher’s voice needs to be loud and clear above the (unoccupied) background noise environment.”

AAAC said clear communication was especially important for students with a hearing impairment or those from non-English speaking backgrounds; two groups it said made up between 25 per cent and 30 per cent of students in primary school classes.

“In 2012 we did a bit of a basic analysis of what you would do, what the standards generally might be, and then we made projections as to what effect that has on skill level. There were some other papers that showed if you had a classroom with better acoustics the students got better academic scores.”

“The results of social surveys have shown a clear correlation between noise levels and performance in schools.”

Mr Stead said carpet also helped but if vinyl floors were required for a space, schools could offset this with a highly absorptive ceiling.

“Generally it is being considered more by design teams and I think there are also more materials available,” he said.

“Information about glazing systems has also improved over time so there is probably more choice for acoustic engineers and designers.”
Sound Enhancement Technology

HEAR and Learn supplies technology Australia-wide to optimise the delivery of teachers’ voices in learning spaces. Think surround sound to create a soft, clear and gentle signal for every child, irrespective of how far away they are from the teacher. More than 7000 Australian teachers have Hear and Learn equipment in their classrooms.

After installing Hear and Learn equipment, educators have noticed a marked reduction in background noise associated with fidgeting and chatter, hence improving attention rates.

“We couldn’t do without them,” Proserpine’s St Catherine’s Catholic College Primary School Assistant Principal Dianne Stevens said.

“We want to provide optimal learning environments for all our students, irrespective of their learning ability.”

While initially used for students with hearing loss, the technology is now a standard across most classrooms.

The Hear and Learn RedCAT system, one member of the family of all solutions for all room designs, is adaptable to the school’s large high ceilinged classrooms and smaller contemporary spaces.

“The RedCATs enable our staff to talk at the same tone and volume as their normal speaking voices and they can be heard clearly by every student in the class, no matter what activity is taking place,” Ms Stevens said.

The overall impact is that classrooms are calmer, and calmer students are more receptive to the learning experiences and the curriculum, which means more effective teaching practices and learning outcomes for everyone.

“The teacher can be heard even from the back of the room just as clearly as when all the students are sitting quietly together in the reading area. It’s a brilliant system.”

Teaching staff have found the technology particularly useful for shy and softly spoken students who are able to give presentations confidently, with the system contributing to their social and emotional development and self esteem.

The audio system can also have a profound impact on children with auditory processing problems where clear and individualised instruction is vital.

St Stephens Pre-Primary teacher Sandra Corcoran from Western Australia believes that the RedCAT provides crucial support for a handful of children on the autism spectrum in her classes.

“If these students in particular are pre-warned of a change in activity and the required movement around our classroom, they are better able to cope with that change. Their success in those instances means they remain calm among their peers and more confident in their learning,” she said.

Hear and Learn’s audio systems allow teachers to speak without strain, students to engage by optimising speech intelligibility, and create calmer and more inclusive learning spaces. More information can be found at www.hearandlearn.com.au.
SOUNDACOUSTICS provides expertise and experience in the education sector to solve acoustic issues in schools. The company specialises in acoustic solutions for classrooms, music tuition rooms, music technology rooms, school recording studios and performance areas.

Shared classroom areas can benefit greatly from the application of acoustic ceiling panels which reduce the overall noise level in confined areas, as well as reducing the transmission of noise from adjacent areas. Covering just 40 per cent of the ceiling area can provide significant improvements.

Acoustic treatments for music rooms need to be suitable for the room’s purpose. For example, bass heavy instruments like the cello or double bass require adequate bass trapping to control low frequency reverberation. This is necessary to hear the instrument clearly and for both pitch and technique.

Drum and percussion tuition rooms require a heavy acoustic treatment in order to keep the overall room volume at a safe level for both teachers and students.

Recording studios have become more prevalent within schools and typically have a control room for recording and monitoring, combined with a live room for the performer. The acoustic treatment required is different for each area.

Acoustic treatment should also be used in large rooms or performance areas, where excessive echo and long reverberation is often an issue.

The MP700/40 ceiling acoustic panel is suitable for a wide range of applications including classrooms, music rooms, gymnasiaums and auditoriums. The panel is particularly effective in reducing hard mid range and high frequency sounds that typically reverberate in classrooms or areas with hard surfaces such as flat ceilings, brick walls, large windows and hard vinyl floors. Manufactured from lightweight open cell melamine foam, the panel achieves an excellent NRC rating of .85.

In music rooms and recording studios, the MP700/40 is often installed in conjunction with corner bass traps and studio wall panels in order to achieve a balanced acoustic treatment. The panels can be easily installed by school maintenance staff or the company can provide installation services. Sound Acoustics can offer acoustic treatments to suit a range of classroom requirements. More information can be found at www.soundacoustics.com.au.
Acoustics solutions for schools

SOUNDFIX Acoustics specialises in making busy rooms quieter through sound absorption treatments, creating quiet, functional spaces. The wide range of products is specifically designed to meet the needs of education spaces, kindergartens, childcare centres and particularly at special needs schools. Children with autism spectrum disorders can be particularly bothered by reverberation and excess noise levels.

SoundFix Acoustics has treated a number of special needs schools in Melbourne, supplying and installing a range of sound absorbing acoustic foam products that significantly reduce noise levels and eliminate echoes in rooms dominated by hard surfaces or high ceilings. The panels are designed to be most effective in the medium and high frequency range, covering the frequency range of human speech and the range in which human hearing is most sensitive.

The lightweight composition of the panels means they can be easily adhered to any surface, are flexible, follow existing contours, can be mounted to ceilings and walls directly or suspended as a feature and are available in any colour to compliment the room’s decor. Adding to these design features, the product is also extremely fire resistant – failing to ignite even when exposed to a naked flame or heat source.

Excessive noise can often be a barrier to learning and is distracting to both students and teachers with studies now finding major education issues linking a noisy classroom to poor academic progress. The problem also affects teachers who are being hindered by excess sound, competing with noises from neighbouring classrooms, corridors, air conditioning and ambient chatter.

SoundFix Acoustic provides schools with an immediate solution, treating areas with acoustic panels which absorb sound. The company offers a cost effective and timely solution to ensure classrooms remain a place of learning. More information can be found at www.soundfixacoustics.com.au.
Rewind the clock back 50 years and the Australian job market looked considerably different.

Technology has disrupted our whole way of processing things, introducing a new crop of careers and industries that value skills tailored towards technology and innovation.

From computer coding and website design to social media marketing, SEO and blogging, the possibilities for the graduating students of today are changing as technology advances.

3D printing is one of the latest technologies to enter schools, producing highly detailed three-dimensional objects via Computer Aided Data (CAD) software.

The technology, also referred to as additive manufacturing, is transforming the way companies do business; creating medical prosthetics for doctors, architectural models, car parts, machinery for the oil and gas industry, right through to fashion designs and historical artefact copies.

3D printing can also enhance practices in the classroom, helping students better grasp the complexities of biology and chemistry molecules, engineering and design, topographic and demographic maps in geology, and mathematic problems.

Australian Council for Computers in Education (ACCE) president Martin Laving said the education industry has hailed 3D printing’s role in getting students ready for a tech-focused future.

“The 3D printer democratizes access to the 3D physical world where tens of thousands of dollars were needed in the recent past, in the same way that laser printers and desktop publishing software did for the print market,” Mr Laving said.

“Additionally, they open the world of 3D conceptualisation to an industry that has traditionally dealt with two dimensional materials, and research has shown that children are more at home with three dimensions than with two.”

Elizabth Fabri

Makers Empire, one of the many Australian companies specialising in the technology, said 3D printing had been around for several decades, but had only reached a point of utility, reliability and affordability for schools in the last five years.

“10 years ago, 3D printers were either very expensive (more than $50,000) or very ‘DIY’ - requiring a lot of tinkering and fixing,” Makers Empire chief executive Jon Soong said.

“But times have changed; the last five years has seen a huge influx of new 3D printer manufacturers constantly improving the quality of the prints and the ease of use of 3D printers while simultaneously reducing the cost to the end user.”

Mr Soong said 3D printing had “unequalled educational benefits for schools”, making abstract concepts such as DNA comprehensible; letting students study inaccessible objects such as fossils and skeletons; improving spatial awareness and thinking; offering real world experience in the design thinking process; and positioning students as innovators and creators rather than just consumers.

“The technology can also be used to solve real world problems,” Mr Soong said.

“For example, one grade 6 class decided to create clips to help their teacher’s toddler who has cerebral palsy. (continued on page 60)
3D printing in the primary curriculum

As the applications of 3D printing technology expand, it's important that students start to develop the design and technical skills required to harness this technology; providing a future workforce with the skills to meet the demands of this growing industry.

Imaginables can help develop these skills in primary school, maximising a school's investment by embedding 3D printing across all levels and in multiple subject areas as a tool to increase pupil engagement and attainment.

The guide has been developed by Imaginables to provide primary schools with an overview of how 3D printing can be utilised across all ages, levels and curriculum areas, including:

• Getting started.
• 3D printing skills progression - a complete progression route with suggested projects for each stage. This takes pupils from total beginners designing in 2D through to them being able to design their own 3D models. The progression route can be applied from Reception onwards.
• 3D printing across the curriculum - details, examples and ideas for how 3D printing can be used across the curriculum with a dedicated section for every primary subject area as well as cross-curricular and business enterprise ideas.
• Lots of project ideas and links to further resources and case studies.
• Further support and professional development.
• Sharing and showcasing your work with the Ultimaker Education Pioneer Program.

Imaginables has published the guide as a handy downloadable PDF to allow teachers to print it out and have it by their side as a valuable reference. The guide contains lots of useful links to specific further information and resources. If teachers have the PDF open on their computer or device, they can click on the links directly to open the resources.

This professional development resource allows schools to develop a plan for introducing 3D printing in the classroom across all ages and subjects in order to maximise opportunities for 3D printing and to develop pupil's skills.

For more information or to get a free copy of the guide email sales@imaginables.com.au.
The Australian Curriculum: Technologies “has an emphasis on thinking – systems thinking, computational thinking and design thinking,” Mr Scoula said.

“While coding and robotics are great for computational thinking, we believe 3D design and printing to be a fantastic tool to teach design thinking while also introducing students to a technology that will feature heavily in their futures.”

GOVERNMENT SUPPORT

School interest in 3D printing has reached new heights in the last five years, with both the Federal and State Governments financially supporting the technology roll out.

In 2016, the Federal Government announced a Digital Literacy School Grants initiative as part of its National Innovation and Science Agenda to encourage and facilitate the new Australian curriculum; Digital Technologies.

In 2015, the Department of Education WA invited interested schools to apply for a 3D printer in 2015. Forty schools from across the State were supplied with a printer, and staff from these schools completed professional learning so they could use the technology effectively,” Department of Education WA executive director of state-wide services Lindsay Hale said.

“While coding and robotics are great for computational thinking, we believe 3D design and printing to be a fantastic tool to teach design thinking while also introducing students to a technology that will feature heavily in their futures.”

Design and technology products for schools

GILKING School Supplies has been the number one supplier of design and technology supplies to Australian schools since 1996. The company has delivered 3D printers and specialty filaments to schools for over five years, with more than 8000 items available for shipping Australia wide.

Gilking supplies the UP range of 3D printers which have innovative features, wi-fi connectivity and software designed for use on an iPad.

The company also exclusively supplies the 3D Industries (3DI) 3D printers which are designed and manufactured in Australia. The 3DI printers have large bed sizes and come with the option for a bespoke printer to be designed and built to custom requirements.

Australian designed and manufactured 3D Printers.

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Several locally developed features include a strong box frame using 25mm RHS steel, heavy duty gantries, an adjustable extruder, a hot end designed by 3D Industries, a high efficiency bed heater, printer control at the printer front panel and an effective frame mounted anchor point/filament cleaner using sponge refill.

The printers have a two-year warranty and unique anti-clogging features to avoid blocked nozzles, with a free replacement hot end if the nozzle ever breaks.

Printing flexible and very soft filaments can be challenging and often impossible for many printers but Australian 3D Industries 3D printers produce top quality results and are available only at Gilking School Supplies. For more information visit www.gilking.com.au.
which offered more than 4000 biological 3D models to create medical instruments, human replacement parts, scanned anatomical data and more.

Modfab director Heike Roberts said using 3D printing at school allowed students to explore a problem by the process of TIME (Think Invent Model Make and Evaluation), with rewarding results.

“One example I had seen was Erin, a year 6 student that noticed his teacher was always frustrated at the mess the computer mice got into in their storage box,” Ms Roberts said.

“The leads tangled and always needed to be sorted out before they could be used and Erin saw this as a problem that could be solved with CAD and the 3D printer.”

“Without any prompting, he conceived, designed and printed this Mouse Rack using the online application TinkerCAD.

“The device is a set of hanging pegs for the mice to drop into and features concealed fasteners and is made from a luminous PLA plastic, so that it can be seen in the storage cupboard without turning on the lights.”

At Hampton Senior High School in Perth’s eastern suburbs, Year 9 students recently used the school’s 3D printer to design and produce the wheels and body for a car and digital software to program the car, while at Vasse Primary School in Perth’s south students used their 3D printer as part of an art project, where they designed, modelled and printed every aspect of a historical scene from the Eureka Stockade.

INDUSTRY FUTURE

The eruption of 3D printing technology is often likened to the introduction of computing in schools in the late 80s and early 90s, where students became proficient in word processing and spreadsheets.

“These are skills that are still specified in job advertisements 30 years later,” Makers Empire chief Mr Soong said.

“We believe within five years all schools will have 3D printers and they will have transitioned from being a specialist design and technology tool to being used across the curriculum in all subjects.

“3D printing will transition in a similar (but faster) way to computers - from initially being confined to a computer lab to today’s classrooms where almost all students use computing devices day-to-day.”

The printers would also be strategically used to promote female students’ interests in STEM.

“An interesting fact that comes from government research in conjunction with our own research is the fact that female students make their curriculum or their career decisions by the end of Year 7,” A3DMA chief Mr de Souza said.

He said 3D printing should be taught to the younger classes in particular to help cultivate an interest from an early age.

“The issue is that we also know from our research that within five years, Australia is going to be about 400,000 graduates short to be able to fill those STEM careers and jobs,” Mr de Souza said.

“The only way that we can solve that problem is by either imports, so use 457 Visas and import the expertise from overseas, which obviously we don’t necessarily want to do, or if we get the young girls involved then we have the potential to fill 320,000 of those 400,000 jobs, and clearly that’s what we want to do.”

Modfab director Mr Roberts said additive manufacturing was without doubt the way of the future, and envisioned small design teams with multi-disciplined members would use the technology to form enterprises and businesses that would “transform our current perceptions of work and employment”.

“Jobs of the future have not been invented as yet but Design, CAD and 3D Printing are definitely future skills,” Ms Roberts said.

Image: Hampton Senior High School.

Image: Vasse Primary School.

Image: Makers Empire.

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HONDA MINOLTA

Image: Hamptons Senior High School.
A passion for media

Brad Minchin is director of media at Guildford Grammar School in Perth, WA, and President of the Australian Teachers of Media (ATOM) WA branch. Journalist Cameron Drummond spoke to Brad about quality video production in schools and prospects for students eager to enter a career in media.

Q. WHAT ELEMENTS CONSTITUTE A GOOD HIGH SCHOOL MEDIA FACULTY?

A teacher who is experienced and passionate about both the practical and theoretical aspects of media education is the most important element.

Everything else can be developed over time, but you’re hamstrung if this isn’t there from the start.

You need a robust implementation of the Government-provided syllabus that covers the important aspects of media skills and theories.

I also believe a classroom course that implements the syllabus using a mixture of contemporary and historic media works/topics gives students a relevant and comprehensive understanding of media in society; past, present and future.

A school also needs flexible spaces that can be utilised for different media purposes; such as viewing media work, responding to media work in the form of assessments, and producing media work from an initial idea through to post production.

It also needs to provide a range of equipment that is of a professional or semi-professional standard.

Media faculties [should] encourage students to make content for the wider community and for entry into state and national competitions help foster interest in the industry at large.

Q. WHAT RANGE OF EQUIPMENT IS NECESSARY FOR QUALITY VIDEO PRODUCTION IN HIGH SCHOOLS?

I can only speak for our school; however our students tend to perform very well in their WACE examinations and are regularly selected for screening in the WA Media perspectives and other national comps.

We currently stock the following equipment:

- DSLRs (we run Canon 700Ds) at a ratio of at least 1 camera to every 3 students
- A range of 50, 55-80, 55-200 lenses and F1.2 macro lenses
- LED light kits
- Tripods on a 1:1 ratio with cameras
- Small Jib cranes
- Dolly and pipe kits
- Slider kits
- 2 labs of computers running Adobe premiere pro CC for post production
- Small studio space with green screen potential

Q. WHAT ISSUES NEED TO BE ADDRESSED FOR SCHOOLS TO PROVIDE ADEQUATE EQUIPMENT AND EDUCATION FOR STUDENTS WANTING A CAREER IN VIDEO MEDIA?

Budgeting is important, as the cost of maintaining equipment and providing equipment that is relevant to industry standards can be costly if you don’t keep it in check.

Implementing a rigorous loans system is very important, to teach students responsibility for their equipment and provide all students with the opportunity to use the specialist gear.

Significant education in the rules of copyright, including education into creative commons resources and fair use (millennials tend to have limited understanding of this, given they have grown up in the “social media/sharing age”).

Q. WHAT CAREER OPPORTUNITIES CAN STUDENTS WHO TAKE UP MEDIA UNITS IN HIGH SCHOOLS LOOK FORWARD TO?

Given the massive push by contemporary business into the digital space, there are huge job opportunities for students that are trained in video, editing and audio visual narrative development.

There are all the traditional roles that are available in the entertainment industry, (including editors, producers, photographers, cinematographers, journalists, sound/foley engineers), as well as more contemporary roles in business, such as marketing, social media, public relations and graphic design.

Many businesses today are looking for young workers who have digital skillsets that they can utilise to launch them into the online space. Media units provide students with these skillsets and give them a leg up.

Q. WHAT EXCITES YOU ABOUT MEDIA PRODUCTION IN SCHOOLS?

I’d just say that it’s really exciting to live in a time where studying the practical and theoretical side of media is no longer seen as an elective or niche educational area.

I’d just say that it’s really exciting to live in a time where studying the practical and theoretical side of media is no longer seen as an elective or niche educational area.

It is now a learning area that has been recognised widely in education as incredibly relevant to contemporary society and studied on par with English, Math, Sciences and Social Sciences.

It’s also fantastic to be able to provide students with new opportunities for future success in a growing area.

All images: Brad Minchin.
For more than 40 years Sunstudios has supported imaging professionals, from broadcast television creatives to Australia's leading portrait, fashion and commercial photographers.

Focused on nurturing the next generation, the bustling creative hub works closely with tertiary educators, providing camera and lighting equipment at no charge and curriculum-related teacher training and course content development.

“We’re here to help creatives thrive and it’s our people that make the difference,” Sunstudios general manager Alan Brightman said.

The company’s staff includes working photographers, technical experts familiar with imaging workflows, and in-house Canon and Broncolor service technicians.

“Understanding our clients allows us to deliver a complete offering from studios, equipment rental and sales through to consultancy, exhibition printing and installation,” he said.

The breadth of talent and depth of experiences on offer has seen Sunstudios expand to forming partnerships with secondary schools to create the right experience for the students.

“We recently helped arrange a photographic competition for students at Forest High School,” said Mr Brightman.

The entries were judged by leading professionals, with a live critique session here at Sunstudios.

“We wanted to provide an experience so, while the winner received a valuable gear prize, the highlight was a work experience placement with us and complimentary residency at the Treehouse, our award-winning collaborative work space,” he said.

The students loved the experience and they also got an opportunity to see real photo and video shoots in action and to view a current exhibition on display. We’ll definitely do more.”

For more information visit: www.sunstudiosaustralia.com.
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“We shop around for the best deal (worldwide), but give you the added security of dealing with a local company,” he said.

“We can sell your old gear or source you quality used equipment for a fraction of the price of new and back it up with a 7 return period and warranty. Just give us your request and we will do the rest. We make it safe for both buyer and seller,”

“Once on our mailing list we will keep you updated on all offers both locally and overseas via our bi monthly newsletters that are delivered to the inbox of over 10,000 industry professionals worldwide and growing each week,” Ms Rowles said.

“With a worldwide dealer network of over 1500 we have just about all products covered,” he said.

“As the founder and managing director of Broadcast AV, my experience in the production and post-production marketplace spans over 19 years, giving me a solid understanding of the industry and its unique requirements.”

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Social Learning with Robots

Disability Units integrate Socially Assistive Robots to maximise learning across the curricula for students with Autism and intellectual disabilities.

By Dr Christine Roberts-Yates, 2017 Commonwealth Bank Teaching Award Winner

(continued on page 24)
Roboticists

Members of staff have been gradually introduced to the complexities of the new technology, as well as the time to become familiar with the latest software, which otherwise may have found intimidating.

Firstly, the familiarisation of Choregraphe software is essential in order to program specific applications that achieve the desired learning outcomes for individuals or small groups of students. Consequently, students are exposed to multiple levels of engagement, progressions of experiential learning and authentic social collaboration that utilise the clues in the learning environment, so that they are able to respond in a more immediate way.

For example, students work with the SARs to practise number and letter recognition using the coordinates in basic chess games, construct pictures using shapes and observe ways to manage emotions and reduce stress.

Furthermore, they use digital stylus and paintbrushes to submit entries for the SA Refugee Week Youth Poster Exhibition, after using Google Cardboard to view a virtual refugee camp in Sirra and utilising the SARs application ‘Small Talk’ to share stories about refugees.

In fact, the SARs provide specific guidance to groups of students and encourage the less confident artists to express their ideas, provide positive feedback and showcase their outcomes on YouTube.

**The Benefits of SARs in the Disability Unit**

Without doubt, the SARs have enriched the learning experiences of students with an intellectual disability and Autism across the DU.

In fact, the social aspect of the robots is a fundamental component of the SAR applications and may be argued the pivot of its success. The SARs have become rewarding social partners and all the students demonstrate intrinsic interest in the various levels of social interaction with them.

Unquestionably, their humanoid features, endearing design, sensors, cameras, and sonar enable them to recognise their environment with stability and precision, thereby readily engaging all the students. Students become involved in observational learning by imitating the posture, gestures and movement of the SARs as well as participating, albeit peripherals at times, in the learning activities.

Every opportunity is taken to script and Choregraphe the NAO robots to assist the students with their learning (e.g.) basic coding using Cubetto, building the Kanos computer and screen, advancing to Lightbot before proceeding to coding with Raspberry Pi and Lego Mindstorms.

As 21st century learners, students participate in a diverse range of high quality, authentic, rigorous activities that connect existing knowledge with information processing and social cognitive problem solving.

The SARs pre-programmed interactive applications (e.g.) Colour Hunter, Math Power, Guess Emotions and Yoga have been useful in reinforcing basic academic and social interaction skills, as well as encouraging the more difficult students to participate in physical activity.

Overall, the SARs enable the students to formulate actions in advance, and approach tasks in a more organised and strategic manner, thereby increasing attention span and cognitive flexibility essential in changes to daily life routines for students with Autism.

Significantly, the SARs act as social mediators by encouraging joint attention and turn taking with students.

Certainly, students with Autism have difficulty in communication and understanding the different nuances of social interactions, and the SARs, as a result of their human-robot interaction (HRI) architecture, are valuable therapeutic/ educational tools limited only by the imagination and energy of the educational practitioner/programmer.

Indeed, the introduction of the SARs has provided positive feedback, developed resilience and provided opportunities for generalisation.

They have enabled students to further develop their range of social skills, participation, levels of spatial and social awareness, gestures and body language, exchange of feelings, turn taking and spontaneous interaction.

For example, programming the SARs to reinforce effective social communication skills and safe work practice across the learning areas, not only enriches and adds value to ‘real life’ educational programs, but enables a more successful transition into the community and workplace.

**FURTHER INFORMATION:**

- regionaldisabilityunitmbhs.blogspot.com.au/
murraybridgehs.sa.edu.au/education-programs/disability-unit
- facebook.com/nao.therobot/

**HIGHLIGHTS**

- 2015 - SBS Insight invited us to participate in their program, ‘Trusting Robots’, where two of our students demonstrated how the NAO robots can be integrated in educational program.
- Professor David David (Head of the Australian Cranio-Maxillo-Facial Unit) invited us to showcase the SARs to his medical team.

- Video clips showcasing the integration of the SARs have been placed on the NAO Robot Facebook page, YouTube and the High School’s Facebook page.

- We are negotiating a research partnership with the CSIRO in Sydney.

**Conclusion**

There are few limitations as to the ways in which the SARs can be integrated across the learning areas for students with intellectual disabilities and Autism.

The use of SARs enables educational practitioners to successfully differentiate the curricula to address the diverse needs of students with intellectual disabilities and Autism.

Initially there may be varied reactions when students are introduced to the SARs. It may be argued that SARs are merely computer-based hardware with limited technological abilities and awareness of the physical context in which they are interacting.

However, SARs can be programmed to become critical elements of interactive platforms that provide effective interventions and adjuncts to learning that have therapeutic benefits, stimulate participation, provide real-time feedback, offer positive reinforcement and personalisation encouragement, and demonstrate a patient, pleasing communication style across a variety of educational contexts.

It is our experience that most of the students have realistic expectations of the SARs and understand the constraints of their capabilities.
Digital Technology for the classroom

AUSTRALIAN company PAKRONICS supplies customised electronic educational systems and training for teachers.

Pakronics is passionate about building a bridge between technology and educators, as educational electronic components often have amazing functions but don't offer further pathways for students to grow their invention and ideas.

The company invests time and energy designing and developing classroom kits that are easy to teach, and also offers a cost-effective ecosystem of tools that a teacher can use to design a pathway for students from primary to secondary school.

Pakronics strongly supports Open Source Hardware (OSHW), which is not only free from royalty software, but also the hardware designs and codes are freely available.

Pakronics workshops help educators and classrooms get started with the custom kits, which include the popular Grove System, a classroom friendly, soldering free, plug and play ecosystem.

The Grove System kit is made up of three parts: the main board, which could be Arduino, Raspberry Pi, Intel Genuino 101 or any other OSHW; the Grove shield which is a bridge between Grove modules and various main boards; and the Grove modules, which has a range of sensors and actuators for building electronics systems.

Due to the plug and play solderless wiring, teachers can take the components apart and reuse them, removing the need to buy extra Grove modules when they change main boards.

The Makeblock kit computer boards are specifically designed for a school environment where soldering and wiring could be challenging tasks for students.

Makeblock have hundreds of mechanical, electronic and hardware parts to make a customisable robot to suit a school's needs, has unique graphical programming software based on Scratch and Arduino, and the electronics parts are colour coded for easy connections and are soldering free.

Pakronics offers a range of robot kits, catering for beginners to advanced users, including everything needed to get started. More information can be found at: www.pakronics.com.au.
SOFOCO is Bricsys Partner for Australia, distributing and supporting the industry leading BricsCAD software program to schools across the country.

BricsCAD is one of the most advanced and intuitive drawing and modelling solutions on the market, offering all the familiar .dwg CAD features in addition to time saving tools and 3D Direct Modelling.

For schools and for students it is free (12 month license) and the program can be used side by side with AutoCAD, using the same commands, same drawing file formats, fonts and hatch patterns.

BricsCAD ventured beyond AutoCAD with parametric assembly modelling, which allows the assembly of 3D machine models where students can exercise the movement by changing parameters.

The software can also export .sla files for 3D printing and .dxf files for laser cutting.

SOFOCO supplies a range of applications that run with the program including ADACX, Artisan and ParaBuild as well as free utility programs that work with BricsCAD V17.

The company also offers BricsCAM BIM for architectural modelling and BricsCAD Sheet Metal to model and unfold sheet metal products.

BricsCAD is a fully-fledged 2D and 3D CAD software program offer professionals, academic institutions and students an exceptional engineering design program.

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Engaging with science

Participation in science, technology, engineering and mathematics (STEM) subjects in Australian schools is declining; so what are we doing about it?

EMMA DAVIES

THE National Scientific Statement has found that the number of Australian students enrolled in STEM subjects is at the lowest level in 20 years.

If the decline in participation and performance continues, Australia may be unable to supply the skills required for the future workforce.

Both the Programme for International Student Assessment (PISA), and the Trends in International Mathematics and Science Study (TIMSS) also reported that Australia’s performance in mathematical and scientific literacy has declined in comparison to other countries.

In response, and as part of the National Innovation and Science Agenda, Innovation and Science Australia (ISA) is leading the development of a 2030 Strategic Plan which will inform and shape the government's objectives for Australia’s science system.

ISA is an independent body responsible for providing strategic advice to the Australian Government on all science, research and innovation matters.

An ISA review found that there are cultural barriers to engaged participation in all areas of science, from education through to innovation, and that while Australia’s research workforce is world class, there are capability gaps and mismatches between skills taught in schools, the vocational education and training (VET) system, universities and those demanded by industry.

ISA chief executive Dr Charlie Day said in a statement that he believes valuing and developing strong science skills is key; Australians needed an appetite to try new things as well as develop science, technology, engineering and maths skills.

“So many of the industries and the jobs of the future are going to be underpinned by these technologies, these capabilities. They’ll either be directly applicable in the jobs of the future or will help people to understand their jobs,” he said.

“So we really want to see the science, technology, engineering, mathematics literacy of the Australian workforce lifted across the board.”

Dr Day said most children started out as scientists, curious and wanting to know more about the world.

“The challenge for us as a nation and for our education system is to nurture that in our young people, so we grow a generation of people who are very comfortable with the STEM disciplines.”

The National Scientific Statement also suggests that the benefits of science can be fully realized only when society is fully engaged with science and science actively engages with society.

The Government intends to ensure that all Australians have all the skills required to innovate, including STEM skills, as well as the ability to work across all humanities and social sciences disciplines to achieve solutions to real world problems.

The aim is to ensure that science and mathematics education are interesting, relatable and valued by parents and teachers.

This will support high levels of participation and appreciation at all levels of education.

Over the last decade, Federal Government investment in science, research and innovation has grown from $6.6 billion in 2006-07 to $10.1 billion in 2016-17. This includes a suite of initiatives through the National Innovation and Science Agenda to support innovation and science across the full spectrum of science education and engagement, to research, research infrastructure, translation and commercialisation.

The National STEM School Education Strategy 2016-2026 aims to lift foundational skills in STEM learning areas, develop mathematical, scientific and technological literacy as well as developing the 21st Century skills of problem solving, critical analysis and creative thinking.

These initiatives and the National Science Statement form the strategic framework for the Government to make investment and policy decisions relating to science in the future.

According to the Australian Academy of Science (AAS), science has largely flown under the radar in the Federal Budget, but the Academy welcomes the funding of $14.3m over three years to establish a whole-of-Government educational data framework that will allow better understanding of educational pathways and program efficacy in STEM as well as other disciplines.

AAS Secretary for Science Policy Professor Les Field released a statement suggesting that the Government could have invested more strongly in the vision for future jobs and economic prosperity, given that a world-class STEM capability is one of the central planks of the National Innovation and Science Agenda.

“The science sector will now look forward to the 2030 Strategy for Science and Innovation to be finalised by the end of the year,” Professor Field said.

The Academy’s initiative “Primary Connections” is running in primary schools across the country and focuses on developing student’s knowledge, understanding and skills to become more scientifically literate.

The program not only aims to boost student’s engagement and understanding of STEM subjects, but also to enhance primary school teachers knowledge, competence and confidence to teach, through professional development and curriculum resources.
PERTH Observatory has been conducting school day tours since the Perth Observatory Volunteer Group (POVG) took over the running of the observatory in 2015.  

The activities have been completely updated and include aspects to correlate with the Australian Curriculum in an activity-based learning environment, POGV School Day Tour Coordinator Dr Chris Coulstock said.

New activities include students having the opportunity to engage in role-play activities, manipulating one of the old telescopes and its dome and looking at the sun via a telescope and computer interface.

The Perth Observatory now offers a choice of eight activities for each of the Year 3/4 and Year 5/6 groups that attend the tours.

“Student have the chance to engage in hands-on activities; manipulating one of the old telescopes and its dome and looking at the sun via a telescope and computer interface. The Perth Observatory now offers a choice of eight activities for each of the Year 3/4 and Year 5/6 groups that attend the tours,” said Dr Coulstock.

Activities are conducted inside and outside the main buildings and domes and there are shade marquees available for use during summer tours. The summer and winter tours are the same although activities are moved indoors or domes during wet weather.

Schools can choose tour starting times and usually choose between four and six activities for students to complete.

There are picnic tables available for students to enjoy a lunch break and POGV hope to build a shaded amphitheatre to provide more seating space.

“One of the big changes we’ve made is to the activities, especially for Years 3-6, we’ve replaced the old activities with hands-on activities that allow students to manipulate the telescopes and look at the sun,” said Dr Coulstock.

As retired primary school teacher, Dr Coulstock believes that Astronomy in primary school can be difficult to teach.

“Many of our activities relate to the curriculum and make your teaching just that little bit easier,” he said.

For more information contact Chris Coulstock from the Perth Observatory Volunteer Group at daytours@perthobservatory.com.au or simply fill in the online form at www.perthobservatory.com.au/tours/school-day-tours.

The Australian Museum is Australia’s first museum and is home to the largest collection of natural and cultural specimens in the southern hemisphere.

Tell the perfect place for students to engage with learning programs that use the latest technology and the Australian Museum’s own collections.

The museum offers a range of expert educator-led programs for students, where children leave the opportunity to touch real artefacts, discover museum treasures and go behind the scenes.

The popular Climate Change and Australian Animals session is suited to years 5 and 6 and allows students to get hands-on and investigate how changes to weather and climate are impacting Australian animals.

Climate change is one of the key issues facing the world today, and during the program students will act as scientists as they investigate what a change in temperature or rainfall means for our native animals.

The program is linked to syllabus areas of science, English and geography, catering to 30 students, or 3 groups per day in 75 minute sessions.

A range of educational resources are available to schools that can’t visit the museum, with activities focusing on Australian natural science and Indigenous culture.

Museum in a Box®, the Museum’s education outreach program, provides quality educational resources with real museum specimens and artefacts, helpful hints, activities, ideas and information.

The Australian Museum is located in central Sydney, across the road from Hyde Park and opposite St Mary’s Cathedral.

More information on the Educator-Led programs can be found at: www.australianmuseum.net.au.
TEACHER Search is a cloud-based system that simplifies the way schools manage their relief teachers, enabling schools to find the best available teacher for the job, saving time and money with no third-party agency fees.

Many schools are still spending time making dozens of phone calls to find relief teachers at the very last minute, only to be disappointed to find out those teachers are already booked.

This is time-consuming and with technology where it is at today there is a simple solution that frees up time for schools to focus on what’s most important - teaching.

Teacher Search provides a login to one platform where schools can manage not only their permanent teaching staff, but also find the best relief teachers.

With the click of a button, schools can approve relief teachers to work at their permanent teaching staff, but also find the best relief teachers.

TEACHER Search is a cloud-based system that simplifies the way schools manage their relief teachers, enabling schools to find the best available teacher for the job, saving time and money with no third-party agency fees.

Many schools are still spending time making dozens of phone calls to find relief teachers at the very last minute, only to be disappointed to find out those teachers are already booked.

This is time-consuming and with technology where it is at today there is a simple solution that frees up time for schools to focus on what’s most important - teaching.

Teacher Search provides a login to one platform where schools can manage not only their permanent teaching staff, but also find the best relief teachers.

With the click of a button, schools can approve relief teachers to work at their school to ensure full control of the quality of teachers taking on relief jobs.

Permanent staff can also log their leave requests.

It is free for teachers across Australia to upload a profile and select preferred schools they want to work at or schools within a specific distance to their home.

Teacher Search’s point of difference is that schools will know when a teacher is unavailable, saving time in contacting that specific teacher.

The company will soon be launching a phone app, which will enable the system to become fully automated.

The current web application allows for schools to manage their current relief staff and also approve any new relief teachers that select the school as one of their preferred schools.

Schools can also search for specific skillsets to ensure they are shortlisting the best teacher for the job.

The web application is already simplifying the process with schools able to access all the relief teacher information they need all in the one place.

Once the app is launched, it will be the first notification a school might receive when a permanent teacher logs their absence and that a relief teaching will be working at the school.

The benefits for teachers include not having to answer dozens of phone calls and messages from schools, but rather a simple phone notification.

Teacher Search allows for better planning and management of relief and permanent staff.

Teacher Search is also offering schools a one-term free trial for a limited time.

More information can be found at www.teachersearch.com.au.

Teacher Search helps schools find the best relief teachers available.

Teacher Search partners with FEDD

TEACHER Search has partnered with FEDD (Foundation for Educational Digital Development), bringing together two initiatives that significantly save time for both schools and teachers.

FEDD is founded by Dr Ian Lillico, a well known commentator on educational matters Australia-wide.

Dr Lillico is an Australian educational industry leader, bringing 41 years in education to his role as chief executive of FEDD.

Dr Lillico has a PhD in Education, a Bachelor of Science and a Bachelor of Education, he is a Churchill Fellow (2000), a Life Member and National Fellow of the Australian Council of Educational Leaders and was the ACEL 2006 National Travelling Scholar and founder of the Boys Forward Institute.

The collaboration with FEDD means more and more teachers will have access to Teacher Search which is included in the FEDD digital learning package for schools.

FEDD utilises the BouncED platform, which harnesses the transformative potential of digital technology to support approaches to innovative learning in the 21st century.

BouncED is the best online learning resource.

Linking with Teacher Search means relief teachers can access the BouncED digital platform and in the permanent teachers absence, the relief teacher can easily access class plans and the simple interface gives the teacher knowledge about each student and their current learning levels.

BouncED has been trialled in 20 schools across Australia in the last two years, with results indicating a 25-30 per cent increase in literacy and numeracy achievements across all students.

The trial results have also shown increased motivation, increased engagement, more critical thinking and developed problem solving skills.

It is a self-paced, hands-on, measurable and adaptive learning tool which saves time on class planning with all resources available in one shop.

One platform and one login for teachers and their students.

More information can be found at www.bounced.com.au.
AstralVision Interactive Displays are specifically designed for the education market and offer all the latest features. A built-in operating system provides a user-friendly interface, an easy-to-use whiteboard mode and on-screen annotation tools.

The education software included with every AstralVision Interactive Display provides teachers with a fully interactive solution, with the flexibility of touch control of their PC when connected to the touchscreen.

With 10 points of touch combined with the multi-touch interactive software, a number of students can be working on or around the display at any one time.

**BONUS INTERACTIVE EDUCATION SOFTWARE**

* Snowflake MultiTeach and RM Easiteach included with all AstralVision Education Solutions

**Snowflake**

MultiTeach is a fun suite of over 30 software apps for touchscreens that can be used by teachers and pupils in early learning and K-12 education classrooms. Busy teachers can also easily and quickly create curriculum specific lessons with custom content.

**RM Easiteach**

Easiteach Next Generation is the latest interactive software from RM Education designed to help you create and deliver motivational and engaging lessons using your classroom hardware.

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