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Issue 13 | Term 3, 2019 | AUD \$12 incl GST | school-news.com.au



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Multimedia
PUBLISHING LIMITED

PO Box 1080, Noosaville BC,
Queensland, Australia 4566

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Cover Image:

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Teach kids the value of their data

Because they're being taken advantage of online.

Data is more valuable than oil. (And has been for years.) But, while we mine the earth for oil, we mine each other for data.

Privacy concerns have remained concerns for a long time, yet internet-based conglomerates grow increasingly intrusive. Facebook was just fined a record-breaking \$5 billion for its mishandling of data that exposed almost 90 million users to political manipulation at the hands of *Cambridge Analytica*. Facebook waxed poetic about the magnitude of the fine but \$5 billion is about as much revenue as the social media giant brings in *per month*. It's a drop in the ocean.

Meanwhile, teenagers today are some of the most prolific social media users, emitting streams of data without even realising it. Ninety-five percent of teens have access to a smartphone, according to the Pew Research Center, and almost half claim they are "almost constantly" on the internet. Data privacy boundaries are blurred: most



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social media sites have a minimum age requirement but children can quite easily circumnavigate the restriction, and parents are uploading a significant amount of information about their children before they can even consent. Most social media platforms have privacy terms and conditions but you have to accept them if you want use the site and most teenagers just want to be on the same platform as their friends.

Should schools be teaching students more about how to protect their data online? Is it

even possible? Data doesn't just refer to names and IP addresses... Google has a record of every purchase ever made via Google accounts or Gmail; the Google Maps Timeline will show you everywhere you've ever been. Media streaming companies could trace your mood based on what you've been watching; a realisation Twitter users had after Netflix tweeted, "To the 53 people who've watched *A Christmas Prince* every day for the past 18 days: Who hurt you?"

Some of it seems tongue-in-cheek and there's something ironic and self-aware about memes going viral on Instagram that joke about social media algorithms listening to your conversations; but, earlier this term, *Techcrunch* published a scathing expose on a Facebook VPN app that was rewarding teenagers with up to \$20 per month to "suck in all of a user's phone and web activity". If data is more valuable than oil but Facebook has been buying personal data from 13-year-olds for \$20 per month, maybe teenagers

need to be better informed.

In the last week of July, NZ company Soul Machines dominated headlines with its chillingly posthuman AI, dubbed 'technology with feeling'. The 'digital brain' has been designed to mimic our human brain chemistry, so the AI can learn and adapt to its environment, improvising facial expressions and interacting through a hyper-realistic digital face and voice. Its implications are mind-boggling, with the company suggesting it should be used to transform the customer service industry. Banks are already picking up the technology and corporate employers are increasingly moving online. Research from Gartner has estimated that a colossal 80 percent of traditional high street banks will disappear by 2030.

We are beginning to witness the end of industries we have taken for granted for decades and the implications for teaching are worth pondering. What jobs, let alone careers, will be available to students entering the workforce in the next 10 years and beyond? ■



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Public schools revolutionising help for severe behavioural problems

UNSW Sydney partnered with a network of public primary schools and preschools in south-western Sydney to establish one of the world's first school-based clinics to provide evidence-based early intervention to young children with severe disruptive behaviour.

Associate Professor Eva Kimonis launched the outreach clinic at Ingleburn Public School, where more than 1,000 students will be assessed during the first year of the clinic's operation and the intervention called Parent-Child Interaction Therapy (PCIT) will be offered free-of-charge to at-risk children, their parents and teachers. The clinic will be run from Ingleburn Public School but will operate across the greater Campbelltown area and include students from Macquarie Fields Public School, Sackville Street Public School, St Andrews Public School, Robert Townson Public

School, Warwick Farm Public School, and Campbelltown Community Preschool.

The PCIT program is an evidence-based treatment for children between the ages of two to seven years who display disruptive behaviour problems. About six percent of Australian children have disruptive behaviour disorders, putting them at risk for future school failure and dropout, family violence, mental illness, and criminal behaviour.

"This is a really important step in bridging the gap between clinical research and practice," said Associate Professor Kimonis. "We have excellent evidence-based treatments that many families are never able to access.

"These children tend to have early-starting conduct problems that negatively affect their home and school environments. There are a whole host of negative things that are likely to eventuate downstream for these children, their families, peers and teachers if we don't address

those problems early enough.

"By preschool age we can reliably identify when a child's disruptive behaviours are at a level that require intervention."

Students will be invited to participate in the PCIT program through either identification as at-risk through a school-wide screening, by teacher referral, or where they are struggling to transition from preschool to kindergarten.

Ingleburn Public School principal Graeme Green said he hoped the clinic model would be so successful that it would spread into schools in the greater Sydney metro area.

"Nothing like this has been done before in a school setting. We are empowering our students to become collaborative, innovative global citizens, and this program will help them get there," said Mr Green.

Associate Professor Kimonis founded the Parent-Child Research

Clinic at UNSW Psychology in 2013 and is its director. In 2016 published a ground-breaking study showing that indications of callous-unemotional traits which describe children low in empathy and remorse can be reliably observed in children as young as age three. She developed an enhanced PCIT treatment to target the unique needs of children with callous-unemotional traits because of their poor response to existing evidence-based treatments. She plans to deliver both standard and targeted versions of PCIT at the Ingleburn clinic.

Research has shown that PCIT reduces children's disruptive behaviours, improves parenting skills and overall family functioning, reduces parental stress levels, and has lower dropout rates than other parenting interventions.

"Our hope is that this world-first, grassroots initiative will achieve national recognition and serve as a model for schools across Australia." ■

Critics bash "insulting" \$30.2m community fund

Schools can now apply for funding between \$1,000 and \$20,000 to improve their school as part of a government initiative the Australian Education Union has deemed a "funding stunt".

According to the government, project proposals will be assessed for the Local Schools Community Fund on the benefit they would bring to the school community. Minister for education Dan Tehan has said there will be an available funding pool of up to \$200,000 for schools in each of Australia's 151 electorates.

However, Australian Education Union federal president Correna Haythorpe said a one-off



\$200,000 grant per electorate for libraries, classrooms and play equipment to be shared amongst all school sectors, is little more than insulting. "Compared to the billions of dollars Mr Morrison has handed out in grants to private schools, it's insulting,"

she said in a statement.

Ms Haythorpe added that while public schools might get a one-off payment worth a few thousand dollars from the Local Schools Community Fund, over three hundred private schools have already been allocated

substantial capital grants worth an average \$1 million each over the last two years. "Guidelines say that schools are eligible for grants of up to \$20,000 but there is no indication of how this will be split between school sectors."

"If the fund is allocated according to school enrolments, each school could receive a one off \$3158, which is only \$7.77 per student. If the fund is split evenly between public, private and Catholic schools, each sector would get \$10 million from the fund, meaning a potential one-off payment of \$1490 for each of the 6711 public schools in the country. By comparison, the Morrison Government's existing \$1.9 billion private schools capital works fund provides each of Australia's 2832 non-government schools with a possible \$670,000 over a decade." ■

Abuse allegations rock Sydney private school

A senior biology teacher from elite private school, Reddam House, has been arrested and charged following reports of sexual abuse made by a student.

After a month-long investigation by the NSW Police's State Crime Command's Child Abuse Squad, 34-year-old Ben Fenner has been granted bail and will face the courts later this term. He has been charged with 11 counts of sexual intercourse with a person under care. The female student was 17-years-old when the alleged abuse took place in 2018. The police complaint was filed by a Reddam House alumnus whose name has not been released.

Fenner's LinkedIn profile no longer appears active, but the Sydney Morning Herald reported he had



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listed himself as the co-ordinator of the Duke of Edinburgh's award at the school, and said he had 11 years' teaching experience across the UK and Sydney. A letter was sent to parents from principal Dave Pitcairn explaining that the matter "extremely serious" and that "pending resolution of due legal process, Mr Fenner will not play any further role at the school".

"We are determined to support the former student and minimise as much as we can the impact on them and on the wider school community." ■

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Australian teachers have higher workloads fewer resources



Australian public school teachers are among the most innovative and enthusiastic adopters of new ideas and approaches to education but face higher workloads, fewer resources and more administration duties than global averages, according to a new international report into teaching conditions.

The OECD's Teaching and Learning International Survey (TALIS) 2018 report focuses on teachers' work in the

classroom, demographics, classroom challenges, Initial Teacher Education (ITE) and training and provision of professional development.

According to the report:

- Teachers in schools with high levels of socioeconomic disadvantage face greater complexity in the classroom. Consequently they have six minutes less per hour of class time available for actual teaching and learning than their colleagues in more affluent schools. This is the highest gap of any OECD country
- Less than 30 percent of new teachers in Australia received formal or informal induction
- School time spent teaching has fallen in the last five years. Time spent on administration has increased, and is now 33 percent higher than the OECD average
- Australian teachers spend an average of 45 hours per week engaged in work on school grounds – well above the OECD average
- 60 percent of Australian teachers report that their professional development

is curtailed by conflicts with their work schedule

- Australian teachers reported that "reducing class sizes" and "reducing teachers' administration load by recruiting more support staff" were by far their highest priorities

According to TALIS, Australian teachers regarded ITE and induction processes as leaving them feeling unprepared for the classroom, while access to professional development was limited by excessive workload and inflexible schedules. ■



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Staving off the teen

vaping epidemic

By Rosie Clarke, Editor

Bart Simpson walks into the Kwik-E-Mart to buy an e-cigarette.

Apu warns: "Remember, this is not kid's stuff! Now, would you like bubble-gum flavour, strawberry shortcake or watermelon dream?"

This brief scene in *The Simpsons* went viral for poking fun at an industry that has become an epidemic in America: teen vaping. Teenagers in this country are also catching on despite Australia's much tougher regulations and many are now calling for schools to get ahead of the trend. Trying to find out what schools should be doing, we spoke to Cancer Council CEO and professor Sanchia Aranda, as well as a high school principal, one former teen vaper, and a couple of education experts.

Why is Australia different?

Australia has strict regulations in place for nicotine-containing products, which is why Professor Aranda says "we are no-where near [the US] level with nicotine-containing e-cigs" but it's a different story for e-liquids marketed as nicotine-free.

She continued: "We are very concerned about the health impact of flavoured materials

and want to see more health research on those products."

Professor Aranda explained that in Australia, nicotine-containing e-cig products are illegal without a prescription and with a prescription they have to be bought from overseas because Australian companies can't demonstrate safety data and therefore can't make a submission to sell the products in this country. "But," she added, "flavoured nicotine-free vapes are unregulated".

This means there is no

specification about what ingredients can or can't be in nicotine-free e-liquids

Australian researchers from the Telethon Kids Institute recently found that six out of 10 varieties of supposedly 'nicotine-free' e-liquids actually contained nicotine when tested. Some samples also contained a known toxic chemical, called 2-chlorophenol. "We also found other things, by-products of animal or human bodily functions, which indicates the process of making the e-liquids might

not be as clean as you might hope," Associate Professor Alex Larcombe told ABC on behalf of his research team.

Teens are not allowed to purchase e-cigs, but they do

While under-18s are not allowed to purchase any type of e-cigarette or vaping product in Australia, teenagers can find ways to import them online. One young man from Queensland told us he purchased his first vape online when he was 16 years' old.



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"I was the coolest kid in my grade for about three weeks, until my parents found out and confiscated it," he said.

He chose a watermelon flavoured e-liquid and thought the vapour "was literally just water".

This seems to be a common misconception from teenagers about e-cigs and one that schools could clear up with their students by sharing research findings.

As Professor Aranda warned, e-liquids can contain things like heavy metals and formaldehyde, so "it's not harmless water". At the same time, the branding of e-cigs and e-vapours tend to attract young people.

Professor Aranda said she has even seen flavours that mimic the branding of a popular doughnut retailer, "so kids can inhale their favourite donut – it's insane".

Not enough research on health risks

Because these devices represent a new technology, there aren't any truly long-term studies that can definitively demonstrate health benefits or risks.

Many ex-smokers who have turned to e-cigs frequently claim health benefits; however there are no substantial studies to prove whether this is true.

According to the Australian Alcohol and Drug Foundation, "there is very little available research that indicates if e-cigarettes can help people quit smoking as the results of studies on individual brands vary".

"Their effectiveness in helping people give up tobacco can only be assessed by the Therapeutic Goods Administration (TGA), which to date has not occurred."

The Foundation expressed concern that smokers may simply become dual users of both cigarettes and e-cigs.

In July this year, the Wisconsin Department of Health Services said it had opened an investigation after 11 teenagers and young people were hospitalised with severe lung damage after vaping.

Professor Aranda said that in Australia, less than five percent of regular smokers are teenagers, "so vaping as a gateway could pose more

problems than solutions".

"There's a myth that e-cigs are 95 percent safer than cigarettes that was based on a guesstimate by 12 individuals and was never substantiated – WHO has discredited it. We need longitudinal studies and we don't know whether inhaling [e-liquid] is better. We would like schools to be much more proactive on educating students on the gateway effects; how

they are more likely to move on to cigarettes and explain why Australia has had a more precautionary approach."

What should schools do?

Including e-cigarettes in your school's alcohol and drug education program would be a good place to start; particularly as one of the reasons teenagers gravitate towards 'vaping' is that they believe it is a safe alternative to smoking. Schools

can also open a conversation with parents about e-cig devices: explain what they look like, how students are able to purchase them online and why they should be wary of health concerns.

Moriah College recently took this initiative, addressing the issue by writing to parents. Head of high school, Jan Hart told us: "Given the relative newness of vaping, it's a topic that many of us don't know much about. We had extremely positive feedback," she said, noting that parents appreciated being kept up-to-date. The school's public letter made it clear that students could be suspended if they "possess, smoke, consume, use, or deal in tobacco, e-cigarettes, prohibited drugs, alcohol or assist another person to obtain, consume, use, or deal in such substances, on College premises".

Education expert and chief learning officer at Cluey Learning, Dr Selina Samuels said: "Educating teens on the risks of vaping (and, of course, smoking) should be a common part of the health curriculum.

"Even with the lack of consensus, it is important that schools take a conservative approach to anything that could compromise the health of their students."

Being sceptical

Schools could demonstrate the differences between Australian and international media as part of their approach to e-cig education so that students know how to be critical of the ways vaping is portrayed by celebrities and in popular media.

Depictions of teen e-cig use are becoming more common, with the latest example in HBO's controversial new high school drama, Euphoria which is currently airing as MA15+ on Foxtel. Even though Australia tightly regulates its media codes of practice, teenagers are exposed to more international media than ever through streaming and regulations frequently differ in international markets. It means there's a possibility that trends from overseas can be normalised and adopted at home.

Staying proactive can help make sure the teen vaping epidemic doesn't take root here in Australia. ■

What is vaping?

Vaping is the colloquial term for 'smoking' e-cigs, or electronic cigarettes.

They are battery-powered devices that vaporise liquid; originally, they were designed as an alternative to smoking tobacco cigarettes. The draw for smokers was that the ritual and behaviour of smoking can be replicated in vaping nicotine-containing e-liquids. But e-cigs have found a new audience in young people looking for a new way to flex on Snapchat.

'JUULing' is a term used frequently by young people to describe vaping. JUUL is a brand of e-cigs that has gained popularity among high school students in particular because the devices look deceptively like USB sticks and can go unnoticed by parents and teachers. They have become such a problem in the US

that JUUL CEO Kevin Burns apologised to parents. "I'm sorry," he told CNBC reporter Carl Quintanilla, "I hope there was nothing that we did that made it appealing to them." The company has shut-down its social media accounts and pulled some of its fruitier flavours.

In just one year, the number of US high school students using e-cigarettes shot up by 78 percent; rising to 3.6 million in 2018 from 2.1 million in 2017, according to a survey by the Centers for Disease Control and Prevention. The numbers prompted CDC director Robert Redfield to warn: "The skyrocketing growth of young people's e-cigarette use over the past year threatens to erase progress made in reducing youth tobacco use. It's putting a new generation at risk for nicotine addiction."



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Developing a strong, connected learning community

By Courtney Knight,
Deputy Principal,
Mount Pritchard Public School

The roll out of the 2018-2022 Department of Education Strategic Plan presented many questions for discussion around what we did as a school to ensure that 'every student is known, valued and cared for in our school'.

It presented a challenge at a very significant time as we were evaluating the previous school plan and had commenced work on developing the 2018-2020 school plan.

The school leadership team reviewed the existing practices and processes with staff in order to improve our current approach to wellbeing.

As a school community, we developed strategic directions that reflected the philosophy of 'Goal 2 - Strong Connected Learning Community': *To create successful learners through strengthening whole*



*school well-being practices and establishing productive community partnerships and **active future-focused learners** to empower students with the skills, values and attitudes necessary to become creative and responsible future focused learners.*

Everyone belongs

We have established a whole school focus on developing the personal and social capability skills that underpin our curriculum, using the general capabilities continuums to help track students and provide opportunities to develop the personal capabilities of self-awareness, self-management, social awareness and social management.

In our culturally diverse community, establishing a sense of value and belonging has been a priority.

Not only celebrating days such as *Harmony Day* and community fun days but

also explicitly teaching our students about other cultures and exploring the similarities and differences between us.

Across the school in 2019, we have established a number of ways to ensure students are known beyond their academic ability.

This whole school approach has resulted in significant reduction of incidents deemed as bullying.

Establishing a growth mindset

In March last year, our leadership team attended the *Future Schools* conference in Melbourne. A statement made by Dan Haesler around





'connectedness to school being one of the leading predictors of mental health in adult life' sparked in us a need to find ways to strength this connection for our students.

We set out to ask students across Years 2-6 if they could name two adults in the school who believed they would be successful. The results showed 44 percent of students could identify two adults who cared about them and their learning. In mid-2017, our school engaged Dan Haesler and Tim Perkins (Cut Through Coaching) to work with our staff on the idea of 'growth mindset' and building students' connection with school. This started a whole school conversation about how we support our students to become resilient, flexible and adaptable learners.

For staff, it created an awareness of how we give feedback to students and initiated a shift in moving from praise-based feedback to feedback that provided students with the know-how to improve both in learning and in social situations.

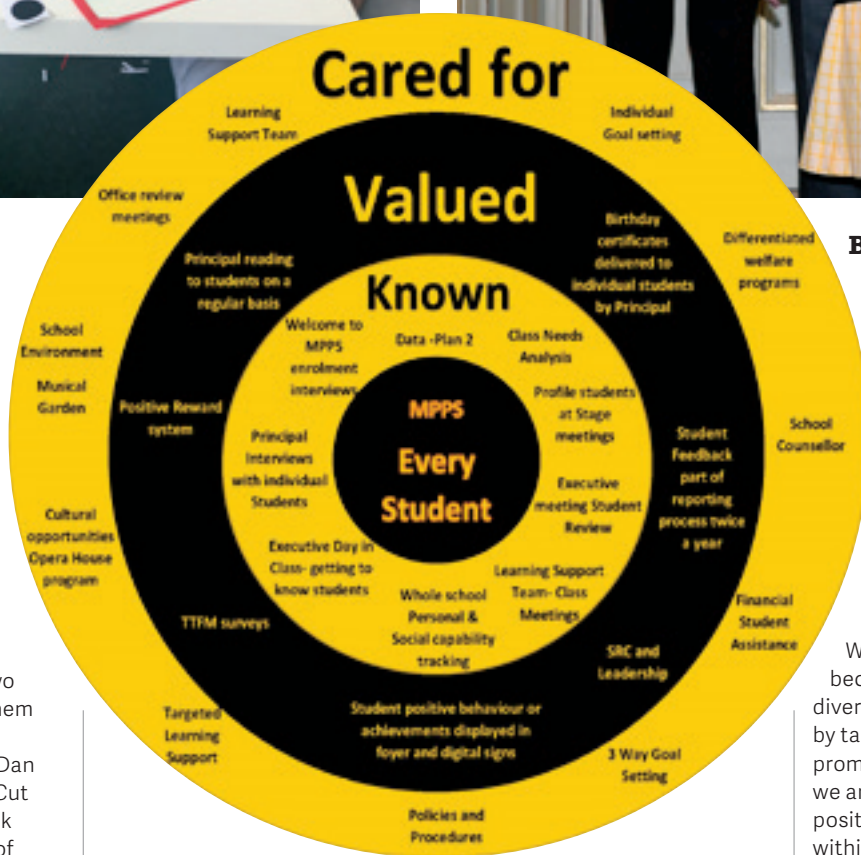


Diagram courtesy of Principal Natalie Piccinin, Mount Pritchard Public School

It also meant staff were having open and transparent conversations about mindset, wellbeing and belonging.

Revisiting our student survey six months on results indicated 92 percent responded positively to the same question.

We asked students across Years 2-6 if they could name two adults in the school who believed they would be successful



Be kind, lend a hand and the National Day of Action

In the middle of this journey, we were approached by Interrelate to record a song 'Be Kind, Lend a Hand', written by Mrs Hurley, wife of NSW governor and soon-to-be governor general of Australia.

We chose to take part because of our culturally diverse school community and by taking part in activities that promote kindness and respect, we are able to engender a positive and respectful culture within the school. We then worked to use the video to launch the annual national poster competition coincide with the *National Day of Action Against Bullying* (NDAAB). This poster competition aims to help teachers engage their students in the concepts of positive and respectful relationships.

These efforts were timely in supporting our message of *every student is known, valued and cared for* and gave us an avenue for conversations around cultural diversity, respect and acceptance. ■



Taking a whole-school approach with teaching aids

Image courtesy of MyBurrow

By Rosie Clarke, *Editor*

The scope and accuracy of data on the number of Australian students who have some form of learning differences has improved with the *Nationally Consistent Collection of Data for school students with a disability*.

The *NCCD Portal* is a comprehensive online resource to guide school communities through the data collection process and provides consistent information on students in Australian schools receiving adjustments for disability. It prompts an understanding of ways to support the most children in the best way and includes free e-learning courses, case studies, podcasts, videos, webinars, templates and wider support materials.

Under the Disability Standards for Education 2005, “students with disability have a right to access general school services on the same basis as other students”. Meaning that appropriate adjustments must

be made to enable students with disability to access general services. This support may include equipment such as adaptive technology and assistive devices and a range of appropriately trained support staff.

Consequently, classroom teaching aids are moving into the mainstream to match the rising number of children that meet the criteria for support as school environments become more flexible. Whether providing small pieces of equipment like pencil grips and timers, app-based accessibility tools, speech recognition software or sensory rooms for students to take breaks in. The modern-day learning environment leans towards inclusive learning; teaching aids that normalise divergent learning are of particular interest.

Many learning needs can be supported by assistive technology devices and simple classroom solutions. Scanning pens and smartpens can help students with note-taking, memory and information processing. Devices like these, along with some app solutions

have cameras and audio recording capabilities, so that students can learn at their own pace, using voice-to-text and/or text-to-voice functions to revisit and reformulate information, create vocabulary lists and facilitate their own learning process. Sensory tools and rooms can help students with a wide variety of challenges, from ASD and sensory processing disorders to anxiety and stress, better engage with their learning.

Schools like Robert W. Coleman Elementary School in Baltimore, US, have even demonstrated success replacing traditional detention with meditation in a specially designed room, where children can practice breathing exercises and refocus before re-entering the classroom.

Industry insights not to miss...

*Scanning Pens Australia representative, David Campbell told **School News** about the looming benefits of sensory tools for students with different learning needs.*

For students with dyslexia, the best kind of technique and strategy is simple re-purposing

everyday tools to fit their needs. For example, using a paper folder as a reading slope/stand or an elastic band around a pencil to create a good grip (for those whose motor skills are challenged). Ensure their needs are met by carefully paying attention to what that student requires, then adjust your teaching strategies accordingly, even something small as placing students in a good place in the classroom to receive positive peer support.

Speaking to classroom trends, flipped learning has revolutionised the teaching strategy with assistive technology and videography. An example of this is recording a lesson or teaching point for students to take home and revise from. Techniques like ‘brain gym’ have become less popular, where teachers would get students to share answers aloud and perform breathing exercises and other co-ordination activities. For hearing impaired students, types of scanning pens with voice recognition capabilities are a great tool and can work with a number of hearing aids/hooks as well as headphones.

► P16

Reading Difficulties: an Australian-wide Problem

Statistics show that millions of Australians have reading difficulties.

Dyslexia is estimated to affect 10% of the Australian population, and this figure increases when undiagnosed reading difficulties are included. Based on a population of nearly 25 million, approximately 2.5 million Australians are dyslexic. It is estimated that 15%-20% of the population has a language-based learning disability. The Australian Bureau of Statistics runs a survey called "Literacy and Life Skills". The research shows that 46% of adult Australians lack the literacy and numeracy skills to perform simple workplace skills. So portable, easy to use products that help people read are in big demand. In today's modern world there is a considerable amount of assistive technology than can assist those with reading difficulties. The online space is particularly well catered for with digital books, tablets, mobile apps and other technological



alternatives. However, it is not always easy to find a solution that will read traditional books and newspapers out loud. The C-Pen Reader Pen is used as a reading aid by thousands of people around the world – from students through to mature adults. It converts printed text to speech enabling the user to hear words read aloud. The Reader Pen gives students the independence to read on their own. This improves results and boosts self-confidence freeing up valuable teacher's time. There is a wealth of research that shows how audio promotes literacy. Hearing the words read aloud improves comprehension by 76%

and increases reading accuracy by 52%. 27% of K-12 students are predominantly auditory learners. The Reader Pen engages students through audio and therefore enables students to access text effectively and efficiently. Being able to read at the same level as their peers promotes a student's confidence and sense of belonging. This also can result in improved behaviour in the classroom. Scanning Pens Australia offers a free trial of the Reader Pen so that schools can determine for themselves how this assistive technology can benefit students with reading disorders, or a lower than expected reading level. They also

offer a trial of their Exam Reader Pen. The Exam Reader reduces exam costs as there is no need for a human reader.

The pen has been evaluated by every Australian Curriculum & Assessment Board. For exam access arrangements, teachers should consult with the relevant awarding body. Generally, exam boards will consider applications on a case-by-case basis. The exception to this is in South Australia and Northern Territory where SACE have approved the Exam Reader for use under Special Provisions. In SA and NT schools can make the decision for their students with a qualifying disability under Special Provisions, without reference back to the SACE Board. The Exam Reader is currently being evaluated by ACARA for use in NAPLAN tests. ▲

Free trials are available online at www.readerpen.com or www.examreader.com or by contacting Scanning Pens Australia on (02) 8320 7161 or Mob 0418 800 234 Email: auinfo@scanningpens.com

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Image courtesy of Scanning Pens

◀ One of the key dos for implementing assistive technology is doing it right. Using the tools that you have to the best of their potential and listening to how your students

individually respond to them. A big *don't* is ignoring this assistive technology aspect or handing it over to someone who isn't passionate about it. Technology is becoming a part of every

lesson in a school environment and putting the support some students need on the back-burner is a critical mistake. A cupboard of shame is a standard in most schools, where a myriad of useful assistive tools may go unnoticed by staff over the years. Make sure to look at every tool you have at your disposal and you might be surprised at what you already have available.

We discussed sensory techniques that teachers can bring into their classrooms to empower learners with Helena Smith and Dimitra Baveas, from MyBurrow.

Today's teachers endeavour to optimise children's learning; however, there are many students for whom learning is a struggle because of a wide range of issues. These include delayed motor skills, poor concentration and focus, lack of motivation, behaviour challenges, unmet sensory needs and anxiety.

In their search for ways to help their students most teachers have tried or become aware of interventions, including body socks, weighted vests and blankets, sensory blockers like ear muffs, etc., along with computer-based instructional activities, tactile and body stimulation toys. The success of these different approaches is as variable as the children themselves. It is not always clear whether some of these

techniques meet non-restrictive practice guidelines and Australian safety standards.

Research summarised in *Teaching with the Brain in Mind* by Eric Jensen informs us that touch and movement can contribute to the reduction of anxiety, promote feelings of calmness and focus the brain ready for learning. The incorporation of movement and actions in the learning process has been shown to enhance the retention of the presented information, particularly during the early developmental years.

Several popular techniques aimed at addressing concentration and anxiety issues, have arisen out of the research on the impact of 'deep pressure'. The efficacy of deep pressure as a possible positive behaviour change agent is based on reports that the application of deep pressure on the body produces biochemical changes in the brain. These changes are in the areas of the brain associated with reduction in anxiety and improved concentration.

Products exist today that can help children optimise their learning in all sorts of environments. Deep pressure relaxation works for students of all ages and abilities, and has a myriad of beneficial outcomes. ■



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AUGUST

- 30 The Education Show**
Melbourne Convention and Exhibition Centre
- CONTACT:**
educationadmin@iecgroupp.com.au
- WEBSITE:**
theeducationshow.com.au
- ABOUT:** The Education Show is a key event of The National Education Summit, an innovative professional development event for principals, school leaders and educators from K-12.

SEPTEMBER

- 03 YES (Youth Eco Summit) Secondary 2019**
Sydney Olympic Park
- CONTACT:**
youthecosummit@sopa.nsw.gov.au
- WEBSITE:**
sydneyolympicpark.com.au
- ABOUT:** A student-led sustainability event featuring a variety of projects on STEM, fashion sustainability and the war on waste, plus projects by the NRMA Future of Transport Challenge Finalist schools.
- 04 Deploying and Managing iPad in Education**
Peregian Springs, QLD
- CONTACT:**
elizabeth@estorm.com.au
- WEBSITE:**
www.estorm.com.au/category/events/
- ABOUT:** This is a free tech tour for educators and school staff interested in advancing their use and management of classroom iPad devices.
- 10 Understanding Autism in the Mainstream Classroom**
Geelong, VIC
- CONTACT:**
anzuk.education/au/contact
- WEBSITE:**
www.anzuk.education/au
- ABOUT:** This information session takes teachers through autism diagnosis, prevalence, how the 'triad of impairments' affects the classroom, supporting learning needs, inclusion, anxiety and managing challenging behaviour.

12 2019 Religious Education Symposium

ICC Sydney

CONTACT:
Registration is via Eventbrite

WEBSITE:
bbi.catholic.edu.au

ABOUT: This is an event for catholic educators with many different workshops on topics like RE pedagogy, science and religion, spirituality, primary school religion, and more.

13 Astronomy and space science themed STEM

Spotswood, VIC

CONTACT:
mvbookings@museum.vic.gov.au

WEBSITE:
museumsvictoria.com.au

ABOUT: A day to discover new earth and space science topics, activities, projects and more specified for the Victorian Curriculum.

17 Parent and Community Engagement for Learning

Ballina, NSW

CONTACT:
gonski@unsw.edu.au

WEBSITE:
gie.unsw.edu.au/events

ABOUT: This is a professional learning event designed to present and workshop strategies for schools to efficiently engage parents and the wider community.

26-27 Relationships & Sexuality Education in Schools

Bentley, WA

CONTACT:
Register via Eventbrite

WEBSITE:
www.gdhr.wa.gov.au

ABOUT: This is a free professional learning opportunity providing ideas for schools to best implement relationship and sexuality education in the classroom or school community. It aims to help teachers build confidence and skills to better deliver information and teach this tricky subject area.

OCTOBER

02-04 National SPERA Conference

UQ, Brisbane

CONTACT:
admin@spera.asn.au

WEBSITE:
www.spera.asn.au

ABOUT: From the Society for the Provision of Education in Rural Australia, this conference focuses on rural learning tools; how to improve connectedness, communication and collaboration.

05 The Educator's Emporium

Marrickville, NSW

CONTACT:
Register via Eventbrite

WEBSITE:
www.esreproductions.com

ABOUT: This is a marketplace-style event for educators to test out a range of new products, games and resources designed for schools. It is also open to the public.

18-19 Flipped Learning Conference

Queensland Conservatorium, Brisbane

CONTACT:
rescon@iecgroupp.com.au

WEBSITE:
www.resconanz.com

ABOUT: This event is for anyone interested in better integrating classroom technology, blended learning or flipped learning. Sessions will include green screen, planning and creating flipped resources, video and problem solving.

NOVEMBER

27-29 Institute of Technology Education Conference

SMC Conference & Function Centre, Sydney

CONTACT:
Register via Eventbrite

WEBSITE:
itensw.com.au/Events

ABOUT: This year's three-day event will focus on resource sharing, skill development and advancement, and updating teachers on current and future directions in STEM education, including the industrial arts. ■

"Large variety of conference topics and solution providers on the expo floor. A great source of new idea generators!"

– Jeny Shepherd, Learning Extension Teacher, Sydney Grammar School Edgecliff Preparatory School

"Great to see so many people and organisations focussed on making education accessible, equitable, relevant and fun for children and adults alike."

– Peter Brake, Adult Literacy Coordinator, Libraries Tasmania

"Excellent learning opportunities in all areas of Education. Also a great central place to look at global trends and impact."

– Penny Ludicke, Leader Of Teaching And Learning, Catholic Education Wagga

"So many great presenters. So much information that I walked away with. Not just theory, but the practical. The ACA stand and their sessions were a stand-out."

– Rob Morgan, Elearning Coordinator, St Virgil's College



Sir Ken & The Beatles

What you missed at #EduTECHAU 2019

"So much relevance of content to education today, with a great ability to meet with educators from across the nation as well as internationally. EduTECH makes it easy to access to diverse suppliers in one place."

– Sue Healey, Director Of Information And Technology Services, Tintern Grammar

"Excellent learning opportunities in all areas of Education. Also a great central place to look at global trends and impact."

– Penny Ludicke, Leader Of Teaching And Learning, Catholic Education Wagga

"A whole range of presentations, displays and information to inform both thinking and practice. It appeals to a lot of learning styles and a diverse audience."

– Alison Forster, Manager, School Information Systems, Catholic Education Services, Diocese of Cairns

EduTECH got people talking once again this year.

From an explosive new keynote talk by Sir Ken Robinson, to a much awaited discussion with Australian of the year Dr Richard Harris and a vast array of bright, shiny teaching and learning ideas inbetween for us all to mull over, this was an exciting event for **School News** and many of you to attend.

Sir Ken Robinson's new talking points

His talk urged educators to push for a further revolution in teaching. Traditional knowledge-based subject areas should be replaced with a focus on merging disciplines and encouraging students to work through competency areas like creativity and resilience. The whole point of education, he explained to a rapt audience, is to provide students with the tools they need to engage the world with their own talent and consequently become "fulfilled individuals and active, compassionate citizens".

Discussing the 'chicken and egg' problem of 'content versus skill' on a panel moderated by Dan Haesler, alongside Dr Jennifer

Buckingham, Pasi Sahlberg and Michelle Michael, he expanded on why traditional subjects just don't work. He said that when drama and dance were missing from the British National Curriculum, he asked why and received the reply that 'dance is part of PE and drama is part of English'. "But it's not," Sir Ken affirmed. "Because drama is a whole series of arts practices. The reason we've come to think of it as part of English is that in recent history, plays have been written down and we read texts as if that's 'the play' but that would be like having music lessons consisting entirely of reading musical scores but never listening to actual music or playing anything."

This "contextual confusion", he said, is an administrative convenience but a disadvantage to teaching and learning. "Discipline is a much better idea because a subject invites you to think of subject matter; i.e., skills, concepts and information." For example...

Maths, music and The Beatles

He surmised that maths isn't a subject in any proper sense; it's a whole set of intellectual skills,



manoeuvres, strategies, cultural understandings and particular techniques made of multiple fields and disciplines all of their own. "Any mathematician will tell you that it's not a subject; it's something they practice; it's not something they study as abstract information.

"Music isn't a subject either; there's an awful lot of mathematics in music and an awful lot of music in mathematics." He argued that for students to acquire skill they need have creative passion and offered The Beatles as an example, having interviewed Paul McCartney in one of his books. Before they started their iconic band, Paul McCartney and John Lennon only knew about three chords between them; they found out about someone who

lived on the other side of Liverpool and knew two more chords, so they got on the bus and asked him to teach them the chords, then they went home and started The Beatles. Ultimately, they were driven to acquire musical knowledge because they wanted to fulfil their creative passion. "Look at them 10 years on and they are much more sophisticated," Sir Ken said.

"Pedagogy is an artform" and "you can't improve education without supporting the development, status and the professionalism of teaching."

Next year will kick off with an all-new *National FutureSchools Festival* in March, then an even bigger, *EduTECH* in June, 2020. ■



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Five tips for using memory techniques in the classroom

Indigenous cultures the world over have memorised vast amounts of practical knowledge about animals, plants, navigation, laws, ethics, history, genealogies, agricultural practices... the list goes on and on.

We don't use their memory methods, yet there is so much that we can learn from them.

1. Use characters

All indigenous cultures tell stories featuring a vast cast of characters who act out information. Knowledge performed is much more memorable than knowledge simply read. Students can use toys, favourite characters from books, films or games, imaginary friends, pets or characters they make up specifically for the purpose. Abstract knowledge, anything from science definitions, mathematics tables or grammar rules can be brought to life through the stories of the characters.

2. Use art and music

Indigenous cultures incorporate art and music in the knowledge they perform. Art and music should not be at the peripheries of the curriculum, as they too often are, but an invaluable tool for enriching all the subjects in the curriculum. It is nigh impossible to forget a catchy song, so why not reword familiar tunes with critical knowledge?



Dr Lynne Kelly,
Author, Memory Craft

3. Create memory palaces

A memory palace is a set of locations that students can walk around in order, inside the buildings, in the school grounds or around any familiar place. Facts and ideas can then be associated with each location.

The neuroscience is unequivocal that information associated with physical locations is retained with amazing accuracy. Australian Aboriginal songlines and Native American pilgrimage trails are examples of this memory method, which is often attributed to the Greek and Roman orators, but in fact dates much earlier.

Laying down a foundation of facts enables students to see a big picture and then play with ideas, analyse, theorise and perform the higher levels of thinking founded on a firm knowledge base. They will see patterns in the knowledge that they could not have seen otherwise.



4. Convert knowledge from one form to another

Mind maps allow information to be presented logically on the page.

Indigenous art works and ancient mandalas served a similar purpose, but used pictures. Creating a little image for each point forces the student to engage with the concept. It is too easy to write a word without knowing its meaning.

Creating logical (and beautiful) paintings, vivid stories and songs from written text can only be done when the student has fully engaged with the information.

5. Handwrite and decorate notes

There are many lessons from the Middle Ages to aid memory. Books were rare and often memorised by the monks and others who had to preach from them.

Typed notes, with every page looking the same, are totally forgettable. Encourage students to hand write and use colours. They should lay out each page differently. It is amazing how often you can remember where an idea was on a page, so why not use that natural facility of the brain and plan the layout with artistic flair? Medieval manuscripts had wide margins so comments could be added when revising, rather than just rote learning. The scribes would add drawings, known as drolleries, often unrelated to the text, just to make each page distinct and memorable.

I have been delighted to watch the way students in both primary and secondary schools have embraced these memory techniques. It has been particularly pleasing to see students who have been disengaged due to learning difficulties or other issues find these alternative approaches appealing and effective. And fun! ■

After four decades in the classroom, Lynne returned to university to complete a doctorate exploring Indigenous memory systems. She is the author of 17 books, including The Memory Code and Memory Craft.



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Improving teacher wellbeing starts with you

Here are 12 actions you can take immediately to start improving your own wellbeing.

Staff wellbeing is a massive issue in schools. Teaching is often listed as one of the most stressful professions. One of the contributing factors is that we deal with people every day and people can be unpredictable. We never know what stressors are going on in other people's lives. That is one of the key reasons why working in schools (not just in teaching roles) is so stressful.

The impact on schools is massive. High levels of stress and poor staff morale impact on staff engagement and therefore impact student learning. The discretionary effort and energy we rely on so much in schools evaporates if we are stressed or not happy in our work. However, 'fixing' staff wellbeing is not easy and requires focused attention by school leaders, systems, school councils and most importantly staff themselves.

Take responsibility for your own personal wellbeing

Many educators put themselves last! They work long hours tirelessly trying to be all things, for all people. Looking after your own wellbeing needs to be a priority.

Undertake a thorough health appraisal every year

Early detection is better than pursuing a cure.

Replace the term work-life balance with work-life satisfaction

'Balance' can be very difficult to achieve, especially in a job where the work is demanding and has social impact. It is important that we get satisfaction from our work as well as the other



Steve Francis,
Creator, Happy School

aspects of our lives. Instead of aspiring for work-life *balance*, aim to get work-life *satisfaction*.

Set boundaries on your work hours

For staff working in schools, no matter how many hours you work, there is always more that could be done. It is vital to set boundaries to stop work overtaking and having an impact on the other aspects of your life. Which day of the week could you leave school at 15:30 and do something for you?

Monitor your self-talk

It is vital that you monitor that little voice inside your head and ensure that your expectations of yourself are reasonable. At times educators can be our own harshest critic. At the end of each day you should reflect on what you have achieved and not be too harsh on yourself if there are still tasks on your *to do list*. School days can be unpredictable with emergencies arising, sabotaging our plans and forcing us to reprioritise.

Prioritise ruthlessly

Time is one of the most precious resources you have. It is vital that you use it well.

Ask yourself often, 'Is this the most important thing I could be doing with the time I have available?'

A good way to feel that you are gaining traction is to identify at the beginning of each day, one important task that you need to make sure is completed that day, for that day to feel successful.

Clearly communicate that harassment and violence are not tolerated

It is a sad reflection on our society that many hospitals and schools now display 'zero tolerance to abuse' signs clearly communicating that harassment and violence towards staff will not be tolerated.

Book a holiday every break

It is vital that you take some time each school holidays to rest and recharge. A holiday doesn't have to be extravagant. Even if you only go away for a night or two, the change of scenery and short break are worthwhile. The anticipation of the holiday can be almost as good as the holiday itself.

Establish and commit to an exercise routine

Exercise has benefits for both our physical and mental health. Establishing an exercise routine is one of the most powerful actions you can take. Often

when people get busy and stressed, the first thing they stop doing is exercising. Yet, exercising is the best thing they could do for their wellbeing.

Stop for lunch

We know eating well is important to looking after our health but we often skip lunch, eat on the run or at our desk. Take at least 15 minutes away from your desk to stop and eat lunch.

Drink more water

We should drink at least two litres of water per day. This equals about eight glasses of water.

Seek expert help if feeling over-whelmed

If you are feeling over-whelmed, seek professional support. It is not a sign of weakness but a recognition of the real complexity of the role you play.

Time for some tough love:

Are you hooked on the adrenaline of being 'busy' and feeling 'needed'? Are your own expectations of yourself realistic? Is your self-talk positive or are you your harshest critic? ★

Steve Francis created the Happy School program to improve staff wellbeing and reduce stress in schools. His weekly articles are received by school leaders in over 600 schools across Australia and New Zealand to share with their staff. Steve also works with great school leaders and staff at conferences and in-house professional development programs designed to improve staff wellbeing and optimise schools.



Teachers need 'psychological capital'

Burn-out has just been included in the *International Classification of Diseases* as an occupational phenomenon, not a medical condition, by the World Health Organisation (2019).

We are literally working ourselves to exhaustion. It is well documented in the research that teacher stress is high and burnout is increasing.

Teaching requires cognitive, social and emotional resources, yet most professional



Daniela Falecki,
*Founder and Director,
Teacher Wellbeing*

development opportunities focus on subject knowledge, curriculum development or student needs. More must be done to support the psychological wellbeing of our greatest asset in our schools – our teachers.

With research always changing and new ideas or new programs frequently released in schools, it can be overwhelming for teachers. While remaining up-to-date with best practice, standards and competencies is essential, we must also acknowledge the human quality of teaching. We must acknowledge that teachers can be involved in up-to 1,000 interpersonal contacts a day. We must acknowledge the mental fatigue teachers face, having made 1,500 decisions a day, and we must support teachers in restoring their emotional wellbeing so they can get up and do it all again the next day.

In a nutshell, we need to help teachers build what professor of organisational behaviour Fred Luthans calls "psychological capital" (PsyCap). This includes teaching evidence-based strategies from vigorous research fields such as hope theory, efficacy, resilience and optimism. Together, these areas of research spell HERO.

Rick Snyder's hope theory explains HOPE as a positive motivational state that involves agency (will power) and pathways (way power). This means encouraging teachers to set their own meaningful goals as well as multiple pathways for actioning these goals that encourage flexibility and scaffolding.

Albert Bandura's work on social cognitive theory highlighted *efficacy* as an important predictor of achieving mastery. When we believe in our own ability, coupled with observation and reflection, we grow in confidence. This means that when teachers are given the tools and opportunities to observe each other and reflect on their actions, they can not

only build their own confidence but can also build collective teacher efficacy.

Martin Seligman's work on optimism highlights the impact our explanatory style can have on how we interpret experiences. This means as teachers we may view events as personal, where we blame ourselves, permanent because we see nothing changing, or pervasive where we use previous experiences to assume outcomes of future experiences. Through awareness and using specific questioning models, we can reframe these perspectives from helplessness to optimism.

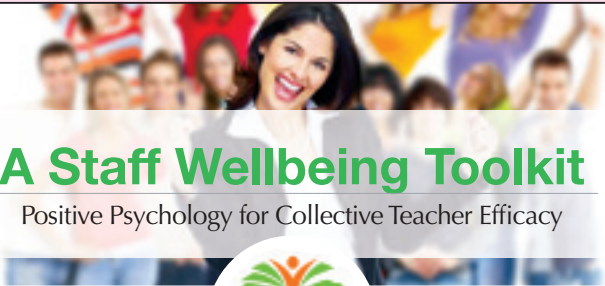
Ann Masten's work on resilience has shown how our psychological, cognitive, emotional and social resources can impact our ability to not only bounce back from adversity, but bounce forward towards growth and development.

This means teachers would benefit from learning how to manage their thoughts, emotions and interactions, to better manage everyday changes and the setbacks we may experience in a normal school day.

What we also know is that while each of these areas of research is already rigorous, when they are put together as PsyCap, they become greater than the sum of its parts.


When teachers are given the opportunities to learn evidence-based strategies that develop hope, efficacy, resilience and optimism, they not only improve their ability to cope and grow but have the psychological capital to be a HERO to both themselves and their students. ★

Daniela Falecki is founder and director of Teacher Wellbeing (www.teacher-wellbeing.com.au). She is known as the 'keep-it-real' teacher who specialises in positive psychology. Her passionate, practical approach makes her a sought-after speaker, sharing stories from her 20 years of experience in schools.



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5. **Mental Toughness** - A curriculum for teachers & teens

WHY? - Student wellbeing begins with teacher wellbeing

Contact Daniela Falecki
The "keep-it-real" teacher
daniela@teacher-wellbeing.com.au

Free resources at www.teacher-wellbeing.com.au

Reframe teaching as a prestigious career path

By Rosie Clarke, Editor

Most industries aggressively seek out the best people for their jobs, so why are we so passive in education?

Australia is pushing to reframe the teaching profession as a competitive, prestigious career path. In order to do this, the way schools advertise and recruit for positions needs to evolve. Passive recruitment, where new teachers independently scope and unfruitfully search for their first jobs while schools ambiguously 'put feelers out' online creates a confusing culture that fails to prioritise talent and skill. In this kind of system, it too often comes down to luck and tedious networking.

Taken seriously, specialist teaching recruitment takes an aggressive stance on finding top talent and matching the right candidates with the right schools. Using agencies and organisations to screen applicants and assist in making the recruitment process as effective as possible can also help mitigate any bias schools might have if their recruitment efforts are left to a single administrator year-after-year. As Zachary Herrmann wrote in the *Educational Leadership* journal: "Application and interview processes that treat candidates like professionals and communicate a level of prestige and honour worthy of the teaching profession could also go a long way toward increasing the attractiveness of the profession."

Building a formal relationship with a recruitment team that understands the culture of your school but also has a working knowledge of high level skillset and experience is a huge benefit to both schools and job seeking teachers. Agencies build a pool of candidates and may be able to match your needs immediately, which is wildly beneficial for last-minute or short-notice openings. They should also know their candidates' personalities, strengths and weaknesses, having

Building a culture of prestige starts with how you recruit your staff

liaised with them for months or years in some cases, which provides insight and confidence that cannot be gleaned in a one-off in-house interview.

Schools should work on their recruitment criteria, identifying specific values and skillsets they prize and the level of performance they want to attract. Building a culture of prestige starts with how you recruit your staff: what matters most to your school? This criteria will give you a workable strategy to build on with a recruitment agency and ultimately allow them to take an aggressive approach within the job market and find you the staff you deserve. Likewise, teachers and staff can have a better understanding of what skills and experience are prioritised by schools, which roles are becoming more prestigious.

The end-goal is to rebuild the reputation of the sector, ultimately providing educators with confidence and pride as they actively shape their careers in this vital, selective industry.

School sector speaks out

Frontline Education agency owners Graham Howard and Sharon Allison said the search for top tier teacher recruits has become increasingly competitive for schools and universities.

They explained that the issue is exacerbated at different times of the year and even more so when recruiting for regional positions. In fact, they added, recruitment challenges faced by clients in the education sector such as tapping into a rich pool of candidates, finding committed recruits, getting the right culture fit, filling vacancies in a speedy manner and spending time and money on the process has become even greater



with fewer graduates in education and an ageing population.

They said that teacher recruitment is not just about ticking the boxes with regard to skills and qualifications. Finding that "perfect match" is just as much about choosing the candidate who shares the values, goals and work ethic of a school.

"Know what your school needs and what the candidate must demonstrate. Carefully frame your interview questions so you can determine if they are the

right cultural fit, and show the candidates around your school, introduce them to staff and watch their body language.

"Recruitment agencies can take the headache and work away from schools by undertaking the entire process on behalf of clients," Graham and Sharon said. "There are a number of benefits to using a specialist education recruitment agency; however, choosing the right recruitment agency may seem just as daunting a task as employing a new teacher.

"With so many agencies competing for business and offering different services, schools have to undertake research when deciding not only whether to engage a recruitment agency but which one to select." ■



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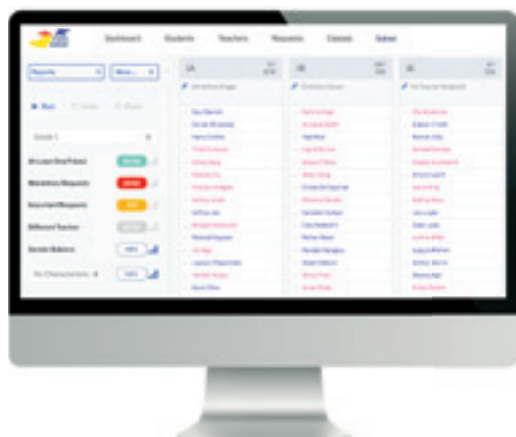
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Design better seating for better learning



Image courtesy of Camatic Seating

By Rosie Clarke, Editor

School children no longer need to be prepped for the office or the factory line. Seating trends are moving with the times.

Today's students are less likely than any previous modern generation to end up in a sit-down-all-day cubicle job. So why are many schools around the country still using this model for classroom seating?

The shift doesn't just come from untold new industries blooming from the ether or from the vast wealth of ergonomic results now cited in health and safety regulations. The push for flexible seating responds to the notion that young people are now more likely to work contract hours than full-time jobs, are better able to work from home (thanks to the internet), and because the corporate world has been influenced by the Google school of office design. Sydney's GoogleHQ made a splash last year when photos were released of its gaming rooms, in-office aquarium and roaming-style flexible office space, equipped



Image courtesy of NorvaNivel

with hidden lounge areas, floor cushions, padded booths and even a hammock. Flexible learning environments are emphasising how teachers can structure learning by arranging the optimum seating. Booths and breakout lounges work better for group collaboration while low, cushioned seating encourages solo reading.

Google employee satisfaction rose by 37 percent and productivity rose 12 percent, according to research by Warwick University. Can these kinds of numbers be replicated

in education? In 'The impact of classroom design on pupils' learning', which was a study undertaken by the University of Salford, school design was found to have a 16 percent impact on 3766 pupils' learning rates. "Furniture and features in the class that were ergonomic and comfortable for the children were significantly correlated with learning progress". The study also found that when students' work was displayed permanently, it gave students a "sense of ownership" over learning and significantly boosted self-esteem.

This is something to keep in mind when designing classrooms and flexible seating environments that will likely be shared by lots of students. Personalise where possible.

The well-known Heschong Mahone study established that children in classrooms with the most daylight and biggest windows progressed approximately 20 percent faster in maths and reading.

However, in traditional classroom designs, desks often face away from windows, directing attention towards a teaching desk or board.

Arranging dedicated seating for focussed study and reading around windows and daylight can have a significant impact on student learning.

Likewise, different seating designs tell students what behaviour is expected in any given teaching environment.

Specific insights from industry experts

Declan Brennan from Melbourne manufacturer Camatic Seating spoke with us about why seating trends have been changing. ▶

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Images courtesy of Resource Furniture

Many schools are building more multi-use/purpose spaces. This has led to an increase in demand for retractable seating to facilitate a given space that can be used in many different ways, e.g. in 'sports mode' it may have all seats retracted to allow maximum court space and then convert into a tiered seating arrangement for school plays and assemblies.

Pros: this provides much more flexibility and therefore requires less construction of more less flexible buildings; it also saves on building costs, land and development costs. Cons: schools understandably don't have much experience in choosing retractable seating systems and in many cases fail to grasp the key and important differences between alternative systems, leading to less than optimum outcomes.

Well-made and comfortable classroom seating makes a big difference to a classroom's overall productivity and concentration. Seating design should be functional, versatile and stylish; even custom-made to suit a



Image courtesy of Resource Furniture

particular school's requirements. It is also important to ensure that any imported products meet applicable Australian standards, particularly fire standards such as AS1530.3, which is required under the *National Construction Code* (NCC).

KloudSac manager Shane Tricarico discussed furniture considerations for students on the autism spectrum or with anxiety disorders.

Children who require proprioceptive (deep pressure) sensory input as part of their sensory profile often have difficulties regulating their emotions, so once they become anxious and distressed they find it very difficult to calm and regulate without an external influence. Once a student with ASD is overstimulated and showing signs of anxiety or distress, specially designed seating can improve

receptivity to other familiar strategies like social stories and visual cards/schedules.

The deep pressure sensory input a child receives when they sink into foam filling helps relax students, which in turn, helps them focus and learn.

Teachers integrating students with special needs may find that soft furnishings are a fantastic resource to relieve anxieties that can otherwise prevent integrated learning.

Schools often select foam bags that are long in shape and suitable for use by several children at once. This is very effective in modern classroom settings where collaboration is prized. For flexibility, schools might also prefer seating that can be used both indoors and outdoors with an option of water resistant canvas covers.

Resource Furniture creative manager, Michael Merlino explained some of the benefits to 'booth seating', one of the new school design trends.



Images courtesy of Resource Furniture



Image courtesy of KloudSac

Booth seating is very popular because it is so variable; from individual pods to six-seater collaborative configurations. Booths with in-built power allow students to charge devices as required and many booth options also have acoustic properties that reduce sound in busy breakout spaces.

Low stools are another popular option for flexible spaces as an alternative to (or in combination with) traditional desk chairs. Many

of these options are now available with curved bases to encourage movement or adjustable heights to cater to students with different needs and of different ages. They are also a great way to add pops of colour with fabric choices.

Depending on age, some students prefer to work on the floor or in beanbags. Some like little pods where they can focus on individual work and some prefer to work higher up on benches where drafting chairs or stools

are popular. Students are drawn to higher seating options, so those are usually the first seating options they take-up. When students have the freedom to choose, they are comfortable and more engaged.

Jolene Levin, NorvaNivel Director and Space Futurist, discussed seating options for specific classroom needs.

Backless seating is ideal for learning environments.

Chairs allow students to slouch back in their seats and be passive and disengaged. Ottomans and stools encourage students to strengthen their core and puts them in the ready-to-learn position. Because of this, backless seating can be used in all learning environments, from classrooms to libraries to science and STEAM rooms.

One of the most important movements in learning spaces is agile furniture. It is lightweight and intuitively designed so students can reconfigure learning spaces on their own. This benefits educators as it takes less time to set-up activities, and students feel more empowered. Choice and ownership also help support self-regulation and encourage engagement. The variety of furniture within a learning space is also key.

Each learner is different, so learning spaces must accommodate varied styles of learning. Whether it's standing on balance boards at a high desk or sitting low to the ground on a seat cushion, students need to have the option to choose where they feel most comfortable. ■

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Deeper learning: Robotics, AI and empathy

By Rosie Clarke, Editor

Robots aren't just for STEM classrooms.

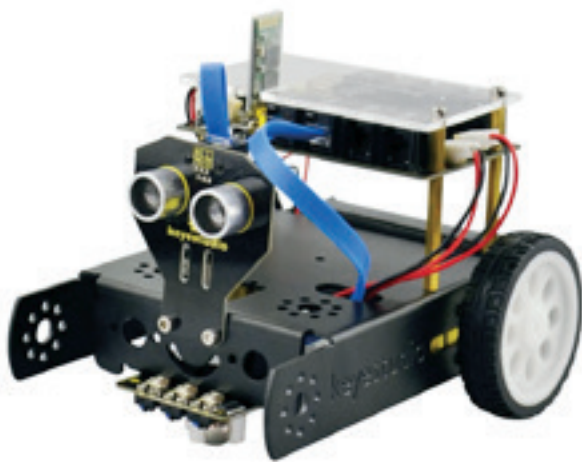
There are a few misconceptions about robots and STEM that do a disservice to both entities. Each one is much broader and more nuanced in scope than the mainstream media might have you believe. STEM is an exploration of skillsets across science, technology, engineering and mathematics that should include robotics but also extends far beyond robotics into electronics and much wider use of different technologies.

Robotics, similarly, has potential for sweeping use within and beyond STEM programs. South Australian primary and middle school, Maitland Lutheran School was praised this term for bringing in a pint-sized robot to help students code and learn their local Aboriginal language. The school population is 16 percent Aboriginal or Torres Strait Islander and its campus is located on the traditional lands of the Narungga people. Because the robot was designed with human features and a sweet disposition, the

children grew very attached to it and teachers found that their students were more likely to practice learned language skills by talking to the robot than studying any language dictionaries provided or even talking to each other. Robot-assisted language learning has also been shown to lower anxiety in students, according to research in the *International Journal of Social Robotics*. In the majority of these studies, robots are employed by teachers in a 'classroom assistant' role to help students in various project-specific ways.

The goal isn't to replace the classroom teacher but better engage students in learning practice.

Another reason digital literacy and digital technologies are so important for students to learn in school though, is the fact that they will very likely be working in industries alongside robots, artificial intelligence, or both. Already, robotics has taken on roles within traditional industries: the Art Gallery of Western Australia has employed a robot tour guide called Aggie to inform visitors about the art.



Images courtesy of Altronics

If you walk into your local bank branch today, it's likely you will see the bank manager holding a tablet device that is running an AI to streamline the branch activities.

Something to consider here is what robotics can teach students about empathy. Last year, 'deep learning' hit the headlines to describe the technological progression of artificial intelligence towards artificial empathy, where facial recognition technology combines with a coded ability to recognise and learn from human emotions then animate emotive responses. In the real world, robotics and other STEM learning areas are bleeding into sociology, psychology, the humanities, and seek to answer huge philosophical questions about what it means to be a human being today.

While the word robot often conjures images of mechanical little humanoids like the one featured at Maitland Lutheran School, programmed to follow instructions, robotics obviously comes in a number of guises; from small machines resembling



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rovers, to basic platforms of switches similar to the inner workings of a computer. The basic concept of robotics and STEM electronics is programming a device to follow instructions; whether that mean flashing a light, following a route or flicking a switch. Robotics kits designed for schools have been simplified for the ages and abilities of students and operate by students programming basic coding instructions.

Options for schools: an industry view

Altronics representative Ben Lowe stressed to us that robotics encourages students to use their hands.

Everyone points to artificial intelligence and robots as being important parts of our future so it is helpful for children to have a basic understanding of how coding works. Kids can immediately see the cause and effect of what they do and it creates a connection in their mind between the hardware and the software.

STEM electronics are an alternative to robots: they include platforms that can be programmed like miniature computers and interface with hardware motors, sensors and keyboards. Many of these platforms are about the size of the palm of your hand and students use them

to learn programming. They can use boards to connect to motors, wheels, mechanical arms and sensors to build an interactive platform for basic robotic tasks, create narratives and games. There are many commercially available robotics kits using these open source platforms, which can be easily programmed by students and teachers.

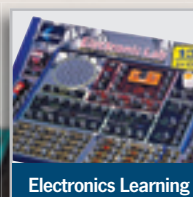
In fact, teachers who want to get involved will find plenty of help on the internet and in the online communities that have grown around the various platforms. YouTube is actually a really good place to start if you want to educate yourself on the subject and you can also sign up for training courses. Different platforms have huge communities behind them that help to provide users with plenty of support when building and designing. Grounding students with basic fundamentals on how hardware, like switches, works before building up to coding and programming is vital. ■

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Nurturing that sense of adventure in us all

By **Brendon Fogarty**,
*National Head of Curriculum
The Outdoor Education Group*

In July 2018, anaesthetist Dr Richard Harris from South Australia and retired vet Dr Craig Challen from Western Australia made headlines worldwide.

They joined an international team to rescue a group of boys and their soccer coach from a flooded cave in Chiang Rai, Thailand. Upon returning home, both men were awarded the *Star of Courage* for unwavering and selfless bravery in the successful rescue of the trapped soccer team. In recognition of the vital roles they played in the rescue mission, Dr Richard Harris SC OAM and Dr Craig Challen SC OAM were named *2019 Australians of the Year*.

It is with a sense of irony and honesty that in their acceptance speech, both Richard and Craig urged Australians and more importantly, young Australians to be more adventurous. Dr Richard Harris stated: "Kids need to be allowed to find their own boundaries and to discover their limits, so I plan to spend this year encouraging kids to do just that. To find the inner explorer and it is equally important to ask parents to relax a little and let them have a bit of rope.



Brendon Fogarty,
*National Head of Curriculum,
The Outdoor Education Group*

Outdoor activities really do promote physical and mental well-being, and it's critical that kids can test their own limits."

There is no doubt that it is within the field of outdoor education that students can test themselves, push the limits of their comfort zones and become more resilient; in other words, be more adventurous.

Research confirms that the role of risk and adventure is essential in human development. Pellegrini describes adventurous activities as "the work of children which helps them develop intrinsic interests, learn how to make decisions, problem-solve, exert self-control, follow rules, regulate emotions, and develop and maintain peer relationships". These skills remain vital throughout life, particularly in vulnerable stages such as teenage years



and it is important to offer educational programs that engender the spirit of adventure.

In the paper titled 'We Don't Allow Children to Climb Trees', Sandseter and Sando suggest that there is an anti-phobic effect when children engage in adventurous activity resulting "from exposure to typical anxiety-eliciting stimuli and contexts in combination with positive emotions in relatively safe situations".

"The children learn to handle risk and gain a more realistic

risk perception, which in turn makes them less anxious about the stimuli and prevents them from developing more anxiety."

Outdoor education experiences provide students with opportunities to participate in adventurous activities that help connect them to the natural landscape and better understand themselves and peers; they are vehicles that enable the value of personal challenge, respect and responsibility to be realised through direct experience.



Images courtesy of The Outdoor Education Group



Adventurous activities require students to experiment and push themselves



Outdoor Education Australia, the national advocate for outdoor education in Australia highlights: "Through engagement in more adventurous outdoor activity students can learn to gain skills for personal and group well-being and lay the foundation for ongoing healthy safe outdoor recreation participation." This foundation of skills transfer into other aspects of a student's life and can help students not only survive when they leave the nurturing surrounds of the school campus but thrive throughout all areas of their life.

Adventurous activities require students to experiment and push themselves to examine what will happen without knowing the exact outcome. Initially, there is fear and trepidation, but the rewards that come from a student knowing that they can achieve a goal in the face of this adversity are invaluable.

A well-facilitated outdoor education program allows students to take on these challenges at their own pace and comfort levels. The student who can get to the top of the rock climbing route the fastest and without fear may end up being the student who struggles with their tent and backpack

management or may be afraid to express their feelings around the campfire at night.

In Dr Craig Challen's acceptance speech, he continued to foster Dr Harris' idea of pushing the boundaries: "There's a temptation to take the easy road to think that life will be better if we mould it to make it as comfortable as possible, but there's a real serious risk in doing this; the risk that we miss the opportunities that present themselves, missing the chance to lend a hand and help others. Or risk never knowing their own strength and what we're capable of and we risk that when we're faced with her test or adversity confronts us, we crumble into a heap and give up instead of standing up.

"So, I urge all Australians to make the most of every opportunity that presents itself and in every decision you make ask yourself does this help me to be the best person that I can be."

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Discover WA:

cross-curricular learning by numbers



The Pinnacles Desert, Photo: Tobias Keller

By Mandy Clarke,
Industry Reporter

Western Australia occupies the entire western third of Australia.

With a total land area of 2,529,875km², it racks up 12,889km of mainland coast, which is the longest coastline of all our states and territories. WA is also the second-largest country subdivision in the world, surpassed only by Russia's Sakha Republic and houses phenomenal chunk of Aussie history.

The state has about 2.6 million inhabitants, 11 percent of the national population, and the vast majority live in Perth (about 2.1 million). Aboriginal and Torres Strait Islanders proudly account for 3.1 percent of the state's population. WA also produces 46 percent of Australia's exports and is the second-largest iron ore producer in the world.

Dutch explorer Dirk Hartog was the first European to land on the Western Australian coast in 1616, with WA establishing a government in 1890 then federating with the other British colonies across Australia in 1901.

Why organise an educational trip to WA?

A powerful geopolitical stronghold for Australia, WA provides many exciting opportunities for schools to enrich their curriculum and works on a multitude of levels. There are a uniquely diverse range of historical sites and excursions available to schools. Ideal for

combining learning areas like geography, history, mathematics and the natural science, WA presents teachers with many opportunities to bring their students' classroom projects to life.

Must-see, go-to 'school sights'

The Perth Mint. Organise a guided heritage walk and observe a gold pouring demonstration at Australia's official bullion mint, wholly owned by the Government of Western Australia. The Perth Mint opened in 1899 in response to the discovery of rich gold deposits

in Coolgardie and Kalgoorlie. Here, diggers from around the world deposited their raw gold to be refined and minted into gold coins. Tie this one in with a visit to a gold mine, where educational tours are also available.

Parliament and The Bell Tower. Free tours explore the history of WA's pre-federation governing system in Parliament House. A 20-minute walk or 10-minute bus through the city of Perth will take you to The Bell Tower, home of the historic Swan Bells, where students can experience the changing of the bells and learn about their history, stretching

right back to Great Fire of London. The Swan Bells include the twelve ancient bells from London's Church of St-Martin-in-the-Fields. Students can play with maths problems, working out how many permutations are possible with 16 bells and learning about factorials in action.

Fremantle Prison. The only World Heritage listed building in the state was built by convicts in the 1850s and used to incarcerate for almost 140 years. It is now a monument to our rich, often tragic history that students can experience first-hand by exploring the labyrinth of deep tunnels by foot and by boat. It's one thing to learn about the prison on a tour, but it's another thing altogether to spend the night in one of the old cells! Yes, you can organise to stay overnight.

Kings Park. Visit one of the world's largest and most beautiful inner-city parks, rich in Aboriginal and European history. Kings Park also has an international reputation for scientific research, leading horticulture, conservation and public education. Spend a few minutes of quiet contemplation at the War Memorial and enjoy guided walks and amazing views of Perth.

Shark Bay. This stunning UNESCO World Heritage site is most famous for the dolphins of Monkey Mia but it also has a population of dugongs, stromatolites and mats of algae (which are among the oldest life forms on earth). Water activities aplenty, students can also enjoy Aboriginal cultural tours. There are even camel rides!



Bell Tower, Photo: Victor Garcia

The Pinnacles, Nambung National Park. Only a two-hour drive from Perth, the Pinnacles Desert has thousands of limestone pillars blooming out from the sand. Explore the origins of these unique rock formations on a walking trail, then discover the crystal clear stargazing views at night. The Pinnacles Desert Discovery Centre has stunning displays for school groups.

Quokka. Have you heard of the Quokka and their island paradise off the coast of Perth? Rottnest Island is home to 20 bays, 63 secluded beaches and a population of the friendliest (and happiest) marsupials in Australia. Rottnest Island Authority works hard to provide curriculum-linked activities for school excursions and they provide self-guided activity kits for hire. Transfers across to Rottnest Island can be booked through one of the two ferry operators and discounts exist for school groups.

Outback adventures. Head north or inland to experience the red dirt interior and perhaps sleep in a sheep station. The Kimberley region of WA is as remote and 'untouched' as it gets; for more adventurous excursions you can explore waterfalls, see ancient rock art, marvel at the Bungle Bungle in the UNESCO Purnululu National Park, or camp by Lake Argyle. Bush Camp Margaret River is a stunning bush camp that offers adventure activities, a high ropes course and accommodation for 160 onsite; with close access to unspoiled coastline, limestone caves, sea cliffs, giant forests and pristine rivers.

Indigenous experiences. Organise cultural tours to learn about Aboriginal history and experiences in Western Australia. They inspire and engage children, fostering awareness and interactive learning. The Western Australian indigenous Tourism Operators Council (WAITOC) work tirelessly with educators to promote authentic cultural experiences at a state, national and international level. ■



Rottnest Island, Photo: Natalie Su



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A giraffe is in the foreground, looking towards the camera. In the background, a city skyline is visible, including a prominent white tower. The scene is set in a natural, green environment.

Zoos have quantifiable learning benefits

Taronga Zoo Wharf, Photo: Thandy Yung

By Mandy Clarke,
Industry Reporter

As an inner-city born-and-bred animal lover, my 1970s excursions to the zoo were the unequivocal highlights of every school year.

I was crazy about the elephants, heartily laughed at the monkeys and wanted to put a penguin in my pocket; it never occurred to me whether it was ethical to keep wild creatures in enclosures. However, zoos have evolved considerably since the 1970s: conservation, research and animal welfare are now reliably front-and-centre. Studies, like the one the University of Warwick undertook on whether 'A visit to a zoo boosts science and environment knowledge' have found there are critical benefits to education both for conservation and sustainability efforts and also for children.

A visit to the zoo in 2019 is not about getting up-close-and-personal with a wild animal, although children will certainly get the chance to engage with beautiful creatures, it is about conserving the future of our planet. Zoos lift the veil for students on the challenges of climate change, the science behind environmental protection and the impact of conservation efforts. Zoo excursions are

increasingly a 'behind the scenes' school trip that requires active participation in learning.

They offer educational activities, special events, conservation days, field trips, a chance to be involved in research programs, the chance to become a keeper for a day and educational STEM-related workshops. Some also offer curriculum-based learning plans and can transform the zoo into an outdoor classroom for students of all ages and abilities, even integrating specially formulated sensory experiences.

Research from the University of Warwick re-affirms the importance of a trip to the zoo for students, showing that a zoo visit can boost a child's science and conservation education more than books or classroom teaching alone. Eric Jensen, the Professor of Sociology that produced the research report, found: "53 percent [of students aged 7-14] had a positive change in educational or conservation-related knowledge areas, personal concern for endangered species or new empowerment to participate in conservation efforts" after a school zoo excursion. He even found that educational presentations by zoo staff increased learning by double over self-guided trips.

To test what information children

were absorbing, the study asked students to draw favourite animals and their habitats before and after a zoo excursion with their classes. For 10-year-olds, 51 percent were able to identify and label scientific terms like 'canopy' and draw more animals in their correct habitats.

How do you decide which zoo to visit?

Find out what programs and research the zoo is engaged in, which zoo staff members you would be liaising with and what kind of educational tours or presentations and activities they can offer school groups. Once you have a zoo in mind, build some pre-excursion learning exercises around animal welfare, conservation and integrate some of the zoo's own animals. Teachers can even arrange a pre-excursion visit to meet with zoo staff and help prepare a lesson plan. Telling the story of an animal who has been helped by the zoo's program can be a powerful learning tool. Some zoos even have webcams and online portals for students to watch animals in real-time and find out more information on specific species for projects.

It is also worth checking out what industry bodies your zoo is associated with. For instance, the Zoo and Aquarium Association represents zoos, aquariums, sanctuaries and wildlife parks

across Australasia that operate to a particular standard of care. The association states: "We have a progressive, science-based approach to animal welfare. Using the *Five Domains* model, ZAA grants accreditation to zoos and aquariums that have clearly demonstrated their commitment to positive welfare. This approach champions welfare from the animal's perspective and it underpins all that we do."

ZAA and its members lead breeding programs and contribute to threatened species recovery around the world. They say: "Together, our members enhance the role of individual zoos and aquariums in conserving wildlife. Each year, they connect 22 million visitors with nature, educate 1.1 million students about wildlife and contribute over \$20 million to conservation."

Sadly, we do live in a world where many species of both plants and animals are on the brink of extinction and zoos are an important part of the global community working towards maximising conservation. Through field projects, expertise in the health and welfare of animals and by raising public awareness of their plight in the wild, zoos can help save endangered species and effectively teach our youngest generations about their plight and our role in protecting them. ■

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We are famous for the Aussie



Big 5, so students can meet koalas, wombats, kangaroos, platypus and our resident crocodile Rocky. They can also experience live birds, snakes, lizards, spiders and mini beasts as well as exploring an extensive collection of animal artifacts. WILD LIFE Sydney Zoo has also recently welcomed three baby emus, so book your trip soon to be amongst the first to see these gorgeous new chicks!

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Try before you buy!

We encourage teachers to come and enjoy a complimentary visit to WILD LIFE Sydney Zoo before booking an excursion. This gives you the chance to plan your visit in more detail and complete a risk assessment. Simply visit wildlifesydney.com.au/schools/ teacher-pre-visit to request your ticket. Before your excursion you will also have access to a wide range of classroom activities to get your students excited about the trip and to set the scene for what they will learn onsite; visit the WILD LIFE Sydney website for more information.

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Real-world learning to solve big problems

images courtesy of Multicam CNC Routing Systems

This issue, *School News* scoped out the latest and greatest developments in CNC routing and laser cutting for the education sector.

Classrooms are more active than ever before and these machines have built momentum over the last couple of years as our curriculum increasingly prioritises interdisciplinary projects. Students are now developing their ideas, creating proof of concept and prototypes for products and innovations that have real-world purpose (and even commercial viability). In the US, Lorain County Community College even has a program where high school students earn money and college credit to design and create a variety of contracted items for school-use, including bookends, lighting, sign engraving and decorations for special events like masks for masquerade balls.

In Australia, students are creating a plethora of products that can benefit their school from fundraising efforts and school branding, to community artwork, plaques and awards, plus an infinite array of project-specific designs like architectural models, unique skateboards and arcade games.

Specifications and classroom applications

CNC router and laser cutter suppliers to the school

sector spoke with us about the technical differences and developments.

Sendy Limargana, the CEO of Red Dot Machinery, said: "There are a lot of things that students are able to create with a CNC router."

"From engraved signs and stencils to intricate furniture items and artwork. They can use a wide variety of materials, including wood, metal and acrylic".

Schools are excited by the possibilities these machines create, he revealed. "There are more and more schools using CNC routers and laser machines to enhance their students' learning experiences. These machines are becoming more affordable and easier to use than ever before.

"There are two common types of laser machines used in schools. The first is the CO2 laser, which is the most common and least expensive type, capable of cutting and engraving a wide range of materials. The second is the fiber laser, which is commonly used for metal cutting and metal engraving. While this type of laser is more expensive than the CO2 laser, it's the best type for metal cutting and metal engraving."

"Before operating a laser machine, students must be aware that laser beams generated from laser machines are invisible. During the machine's operation, it is essential to keep any body parts away from the laser beam to avoid injuries. Fumes from laser cutting and engraving should not be inhaled. Similarly, with CNC router operation, careful consideration of health and safety is vital. Students should always keep body parts away from the machine to avoid injuries, and it's important that they read and understand the user manuals prior to using the machines.

"There are also opportunities to strengthen teachers' knowledge and skills with this equipment. The possibilities for application are infinite and powered by creativity."

According to Stephen Heusz, speaking on behalf of Multicam CNC Routing Systems: "CNC Routers are widely used in many different industry sectors." ▶





Enhance STEAM Curriculum

- Engage students with hands-on learning
- Classroom safe, user-friendly
- Foster creativity & innovation
- Strengthen design & critical thinking skills

◀ "Including sign and point of sale display, kitchen manufacturing, shop fitting, plastic engineering, aluminium engineering, and more. So, teachers are able to gain a greater understanding of the construction and manufacturing process involved across these industries and apply this understanding to their classroom curriculums and projects. Students' skills in design, software operation, machine operation and construction (where applicable) are all enhanced when using CNC routers.

In terms of safety, he reminded **School News** that "CNC routers are built with a lot of inherent safety features, but in the end they are still mechanical devices capable of causing injury if not treated with respect".

"The safe use of these machines is no different to the safe use of a hand saw, drill press, lathe or chisel.

"Students must always be supervised when using the CNC machine and should not be allowed to operate the machine on their own."

Schools on the forefront of technological application

"Rather than just producing a simple job, recent trends in the use of CNC routers in education have been to create a project with a more holistic approach," Stephen explained. "Students are required to collaborate on a project to achieve a result, which can be as in-depth as imagining and researching a project, producing designs, testing the designs, testing the need/market, using computer CAD/CAM software to envisage the end product, choosing suitable materials, machining the product and then finally presenting the finished product. This can extend all the way from market research to market presentation for a business enterprise."

Jordan Buhagiar, laser division manager at Alfex Laser, spoke about the wide range of materials schools can use with a CNC router.



Image courtesy of Thunder Laser

"Most common in the classroom tends to be wood, plastics and hard foams; projects can range from edge-lit acrylic signs, skeleton or robot cut-outs moved with gears, chess boards, fidget spinners, and even architectural models. Over the years, many schools have stuck to simple 2D routed or laser cut designs but more recently we've seen complex, detailed projects being created with multiple different materials and other technologies like 3D

printing. "First and foremost, any machine located in a classroom environment should have a laser safety classification of Class 1 or Class 2, which means the laser is not able to escape out of the machine enclosure. In addition, ensure that all access panels to the laser are interlocked so the laser will not fire if a panel is removed. The safety of both teachers and students using these machines is the highest priority so these points are non-negotiable in my view."

"I think it's important that students sit through a quick induction regarding the use and safety requirements of any equipment in the classroom. This can be provided by a teacher who is trained on its operation."

"During consideration of purchasing a laser it is a good idea to organise an on-site demonstration at your school to allow as many people as possible the opportunity to see them operate and ask questions. Schools should also look for comprehensive training to be included with your machines."



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Glenn Traves

Glenn Traves, from Thunder Laser provided us with a detailed overview of materials that can be used with laser machines:

- Acrylic
- Anodized Aluminum
- Bamboo
- Ceramic
- Double Colour ABS
- Fabric and Leather
- Glass
- Foam
- Granite
- Grip Tape
- Metal
- Paper
- Plastics
- Rubber
- Wood

"Cost-effective and reliable, CO2 laser systems are becoming more popular for schools. The maker movement trend supports the laser industry, and these machines are efficient because they enable precision cutting and engraving. They offer plenty of opportunities for classrooms to explore, such as prototyping, modelling, woodwork, architectural models, art and design, graphic imaging, photo engraving, signage, school branding, and creating in-house custom awards or trophies."

He said the most exciting part of the technology is that: "Students are 'hands on' in every step of the process. Software to design student creations are readily available and easy to learn with the assistance of online tutorials.

"Laser systems enhance a student's ability to innovate and ignite creativity. The combination of traditional and modern innovative teaching methods not only enriches classroom interest, but also integrates knowledge of science, technology, engineering, art and mathematics. Teachers can boost STEM and STEAM programs with existing laser cutting and engraving techniques; this gives students hands-on experience in cultivating advanced awareness and thinking, stimulating the nature of curiosity and active exploration, guiding each other to solve problems and create solutions."

His tips for schools researching this technology include: His tips for schools researching this technology include:

1. Check the safety ratings. Class 1 or Class 2 laser systems are recommended due to their additional safety features.
2. Plan for filtration and exhaust fume ducting. Smoke and dust particles will be present in the exhaust fumes.
3. Be aware of fire hazards. Keep the area free of flammable materials and a fire extinguisher and blankets nearby.
4. Know the materials that can or can't be cut and engraved. E.g. PVC will provide lethal chlorine gas. ■



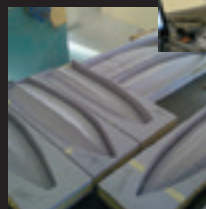
Image courtesy of Reddot Machinery

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Class Solver transforms student placement process at Tasmanian school



Screenshot from supplied video, L-R Sue Cunningham, Jane Doyle and Selina Kinne

By Mandy Clarke,
Industry Reporter

The vibrant and diverse co-educational Catholic school, Dominic College in Hobart had a problem that most schools encounter at this time of the year - creating their class lists – a time consuming process. They resolved this issue by introducing Class Solver the award-winning system that revolutionised the way students are allocated into classes as they move from grade to grade.

The Class Solver system adapted to Dominic College's existing approach to class placement, making it easy for staff to understand and transition to a digital solution saving many hours for the school.

The idea for Class Solver began in 2013 by founder, Amy White after her daughter was placed in a classroom with

Out of sight, it has just streamlined the whole process, it's much more transparent and people understand why decisions were made



no social support and since then Class Solver has worked with hundreds of educators to design, test and refine the most advanced system for creating class lists.

School News spoke with Amy who told us: "We are all about the children... this is where it started with my daughter. When we saw how hard it was for the school, we had to find a better way. The staff who created the class lists were all working so hard and knew the kids so well – they just didn't have the right tools to help them. They deserve better."

Feedback from schools that have implemented Class Solver has been overwhelmingly positive and the feedback from Dominic College is no different.

Jane Doyle, the Coordinator of Teaching and Learning K-2 for

Dominic College revealed that the task of sorting students into classes used to be a long paper-based task.

She commented that "The new process melded well with the old paper system that we had in place previously to create classes which allowed for classroom teachers who know the children best to fully contribute."

Selina Kinne, Director of Teaching and Learning K-10 recognised that the Class Solver program helped ensure that the classes were balanced and took into consideration all of the different academic, personality and pastoral issues that are so important when creating class lists.

Sue Cunningham, the Year 3-6 Teaching and Learning Coordinator, commented

that the process is now much quicker and teachers are still able to contribute. As for how much Class Solver has improved the process, she said: "Out of sight, it has just streamlined the whole process, it's much more transparent and people understand why decisions were made."

All three educators found Class Solver easy to use. Sue commented that "the layout is very clear, very logical, it didn't need a lot of explanation". Jane said: "We love it. It saved us so much work, our teachers so much work, at such an important time of year".

Amy added "Class Solver is not just about saving time, it is about supporting educators to make the best decisions possible for their students. There's a lot of academic research that shows the importance of class placement for both the well-being of the child as well as their academic performance. Schools should have the best tools to help them make the right decisions for their students. It feels great to be helping schools in such a meaningful way. ■



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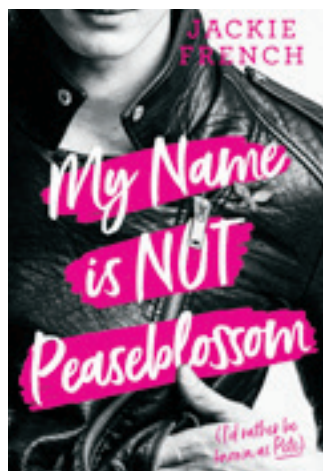
EXCLUSIVE AUTHOR INSIDER:

JACKIE FRENCH

By Rosie Clarke, Editor

In our 'Facts behind the fiction' series, *School News* invites world-renowned authors to analyse their own text specifically for the classroom.

In this instalment, we hear from prolific Australian author Jackie French, as she delves into her YA novel, *My Name is Not Peaseblossom*, which is a spectacularly fresh reinterpretation of Shakespeare's *A Midsummer Night's Dream*. Her suggested discussion points and self-reflective summary of the novel itself are designed to aid teachers and students in the classroom. (Particularly useful for those studying Shakespearean themes!)



Fairies are cute. Fairies are sweet. The fairies in *A Midsummer Night's Dream* dance and sing and play magic tricks and can fly around the world in seconds. And by squeezing a little juice into their eyes, the fairies can also have happiness and true love as they will adore the first person they see forever.

But there are drawbacks to being a fairy. You have to follow orders from the king or queen. And royalty in the world of *A Midsummer Night's Dream* can be capricious, just as they were in Shakespeare's day when the wrong words could have you chained in the stocks and rubbish thrown at you - if you were lucky. If you weren't, your head would hang on Traitor's gate - after your innards had been pulled out while you were still alive.

And what if you didn't want cute and sweet? What if you preferred pizza to fairy bread and fell in love before the magic juice had been squeezed into your eyes? And what if you'd rather be known as Pete, instead of Peaseblossom?

I began the 'Shakespeare Series' writing *I am Juliet* about Romeo and Juliet from the point of view of Juliet, adding scenes that might have happened, while staying true to the play. *Ophelia, Queen of Denmark* is about Hamlet, but with a happy ending and a lot of cheese. But true to the play too. *Third Witch* is Macbeth, but with no witchcraft, only pretence and mistakes, and a happy ending, for some, at least.

My Name is Not Peaseblossom is the last in the series, and the first from the point of view of a man. It's a comedy, as *A Midsummer Night's Dream* was performed as in Shakespeare's time. But *My Name is Not Peaseblossom* has deeper questions at its heart. As does the original play. *A Midsummer Night's Dream* can be seen as tragedy, as well as a comedy, how both mortals and fairies suffer under the whims of two kings, Oberon and Theseus, and two Queens, Hippolyta and Titania.

But at its heart is a question as relevant today as it was when the play was written. Which would you rather have,

real life or faked happiness? Whether we choose to spend all our free time watching vicarious adventures on Netflix or having flowerdrops put in our eyes to give us everlasting love, do we want to face the problems the world faces, or even the heartbreak of our friends, or stay in happy ignorance?

I like real life. But one day, perhaps soon, a perpetually happy virtual reality will be possible for everyone.

Which will you choose?

Discussion points:

In Shakespeare's day everyone was supposed to stay in the social position they were born into. A glover's son like Shakespeare was meant to stay a glover. Instead, and quite radically, he became an actor and theatre manager. Someone rich enough to buy a coat of arms and become a gentleman.

Gentlemen did not write plays back then, or act in them. Do you think, with his riches, when he was back living in Stratford, Shakespeare ever regretted no longer being able to write?

We have the freedom to be whoever we want to be. Or do we?

In the recent past, in Australia, people have been prohibited from jobs because they were women, or practiced the wrong religion, or had the wrong skin colour. Discrimination on the grounds of sex, race, religion or skin colour is illegal now. Does it still happen? How?

And what might be done about it?

Which would you choose: happiness forever with someone chosen for you or the ability to choose yourself, even if you get it wrong?

Shakespeare was the first playwright in a thousand years to give women strong

roles, possibly because he wrote with a strong, intelligent queen on the throne. But when James I became king, he made Shakespeare's troupe the King's Players. King James distrusted and even hated women in power, and also witches and magic. How do you think Shakespeare may have tried to please the king with this play?

A Midsummer Night's Dream depicts two girls subject to the rule of their fathers. Do you think Shakespeare approved of this, particularly as the father of daughters, especially one called Judith, who so disgraced their family?

Fairy, selkie, vampire, ogre, troll, banshee, sea monster or human: which of the species in *My Name is Not Peaseblossom* would you choose? And why?

***My Name is Not Peaseblossom* by Jackie French is out in July, published by HarperCollins Children's Books.**



BOOK REVIEWS

New to the
bookshelf
this term



Jack and the Jungle

For age 5+

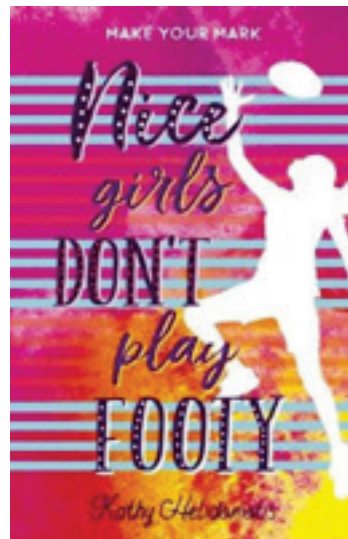
By Malachy Doyle and Paddy Donnelly

Bloomsbury

"Jack was scared but he was really brave. I liked the story a lot."

– Louise, age 6

Themes and genre: young readers, facing fears, friendship, imagination.



Nice Girls Don't play Footy

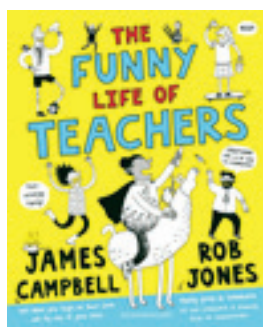
For age 9+

By Kathy Helidoniotis Scholastic

"The AFL games and the big tryout at the end were really exciting. Josie and Princess were my favourite characters."

– Maddy, age 10

Themes and genre: family, multi-cultural identity, sports, girl power, friendship.



The Funny Life of Teachers

For age 7+

By James Campbell and Rob Jones

Bloomsbury

"It is like reading a maze because of all the signposts. The jokes are funny. I showed my best friend on the bus and he laughed at Mrs Fridgewater's jar of bottom burps."

My favourite part was the time travelling teachers." – Grayson, age 8

Themes and genre: humour, 'choose your own adventure', comic strip, short story collection.



Space on Earth: Intergalactic facts about the world around you

For age 10+

By Dr Sheila Kanani Alma Books

"My favourite fact is that astronauts helped invent invisible braces. I wish you could buy 'astronaut toothpaste.'" – Ali, age 12

Themes and genre: non-fiction, science, physics, space, STEM, history, fun facts.



Pages & Co.: Tilly and the Bookwanderers

For age 9+

By Anna James

HarperCollins Children's Books

"I liked how the letters change when magic happens. Now I'm reading some of the books they wander into - it's fun imagining Tilly and Oskar inside them." – Olivia, age 9

Themes and genre: fantasy adventure, magic, secrets and lies, family loss and grief, friendship, inclusiveness, book positivity.



Pirate Boy of Sydney Town

For age 10+

By Jackie French

HarperCollins Children's Books

"I liked the way it went from Sydney to the sea and into battles. It had great twists." – Clark, age 10

Themes and genre: historical fiction, adventure, pirates and shipwrecks, Australian fiction, Indigenous Australian characters, friendship and betrayal, freedom. ■

Becoming a WATER ONLY school

By Rosie Clarke, Editor

How many of your students drink coffee or energy drinks?

Caffeine is probably the most accessible stimulant consumed by children and young people.

A 2017 study on energy drink consumption among New Zealand adolescents found that 35 percent of high school students had consumed energy drinks in the past week and 12 percent had done so four or more times that week.

It's harder to quantify how many teenagers drink coffee and other caffeinated drinks on a regular basis, but a US study in *Paediatrics* journal placed the figure at 73 percent.

Caffeine isn't just an issue because of links to anxiety and impact on growth; it is a diuretic. Students consuming caffeinated beverages are more likely to be dehydrated and even mild dehydration can impact a child's ability to learn, cause headaches, lethargy and irritability.

A recent Harvard study warned that children and teens are simply not drinking enough water, and advocated for schools to come up with ways to keep kids and teens drinking plain water throughout the day.



Images courtesy of Bibo Water

Pencilling in water breaks

A good strategy for schools could mean scheduling water breaks throughout the day, even during class time.

Where is the closest drinking water fountain or bubble from each classroom, or the library? If it is going to take too long for a student to fill up their water bottle during a lesson to allow

them to do so, then the fountain or filtered water access is likely too far away or you need to look at increasing water options.

Distributing personal water bottles for students to fill up during the day, or making it compulsory for students to have water with them during lessons could encourage hydration.

How about incentives for remembering to bring their

water bottle to school, like extra reading time or tokens students can 'cash in' for privileges.

Tips for becoming a water conscious school:

1. Follow our lead: encourage teachers and staff to drink water during class and in staffrooms. If teachers drink coffee and sugary soft drinks around students, it normalises the behaviour.
2. Have water-themed fundraisers and school events. Avoid selling drinks, except for water, at sporting and other events. Make sure there are water options and prioritise 'dressed up water' instead of soft drinks by infusing it with fruits and sugar-free flavours.
3. Make it a challenge. Get students involved in making the rules and work towards becoming a water-only school. Year groups could compete to find out who can drink the most water in a term.

Industry take

Trang Do spoke with us from Britex, to explain how schools can choose which water options will suit them best.





Images courtesy of Britex

Drinking solutions for schools can range from wall-mounted, floor-mounted, trough-style, pedestal fountains, or even refrigerated styles, and can be installed both indoors and outdoors. AS1428 compliant/ accessibility options should be considered for all-inclusive use.

Stainless steel troughs and fountains with radiused edges provide safe, easy-to-clean and vandal-proof benefits. For younger users, I recommend lever activated drinking bubblers with anti-bacterial rubber mouth guards for hygiene and added safety. High school users have a wide range of sturdy cam or push-button activated vandal proof bubblers to choose from too.

On the other hand, fountains/ troughs are low maintenance, eco-friendly, convenient

and add value to a space. Space-saving initiatives want bubblers designed with in-built bottle fillers in bright and bubbly colours, in-keeping with a pre-primary/primary learning environment. Lead-free, safer tapware that is produced from stainless steel is understandably popular as standards for drinking fixtures in schools change. Lead-free options will likely extend from tapware through to sanitary fixtures as well.

Bibo Water specialist Peter Molloy discussed staff options and pro-water strategies with us.

When it comes to supplying thirsty students with lots of readily available drinking water it's hard to go past the traditional water fountain either stand alone or multiple outlet

trough types. The key is to have these strategically located around the school for quick and easy access. There is a huge range of products available in the market and the best designs have hygiene guards to prevent contact with the actual outlet.

For outdoor areas, the latest trend has been towards filtered drinking water stations such as the kind seen at public beaches and parks. These have high flow carbon filtration systems to remove chlorine, lead, and other contaminants from the water and generally incorporate both a water fountain for drinking and bottle filling outlets. Another advantage of these systems is that they feature billboard panels that can be branded with the schools name, logo, and hydration or recycling messages.

For the staffroom and office areas the traditional choice for chilled water has been 15L bottled water coolers although these have been in decline for many years in favour of plumbed in filtered water (point-of-use) coolers. More recently, a number of schools have opted for undersink boiler/chiller systems with an above sink tap dispensing filtered chilled and boiling water. However many find these systems are expensive to purchase and have serviced. The latest trend is towards lower cost countertop water dispensers that filter, purify, chill, and boil water for both cold and hot beverage needs. These more portable systems are ideal for staff kitchens, office areas, and teacher refreshment stations. ■



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FOOD & BEVERAGE

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Sorting out the air conditioning by 2020

By Rosie Clarke, Editor

Too many schools around Australia get too hot and it impacts student learning.

During summer of this year, Victorian state primary schools made headlines with children becoming ill and suffering nosebleeds because their classrooms had no air conditioning.

Young students from Brunswick South West Primary School told *The Age* that they were measuring temperatures over 30°C in their classes, making it “so hard to concentrate”.

Research going back to the 1970s has shown that temperatures above 23°C can negatively impact student comfort and concentration, particularly in subjects like reading and mathematics. A 2018 Harvard Kennedy School study of 10 million secondary school students found that they had better academic results after a cool school year than after a hot school year. In fact, student achievement dropped by one percent per additional degree in temperature (in Fahrenheit as this was a US study). Associate Professor Joshua Goodman reflected: “School air conditioning penetration reported in 2016 mitigates the adverse effect of hot temperatures substantially, such that moving from a school with no air-conditioned classrooms to a school with all air-conditioned classrooms reduces the impact by approximately 78 percent.”

For schools that have air conditioning, and those hoping to install it, maintenance, ongoing cost, ventilation and

environmental efficiency are hot concerns. So, **School News** spoke with a few leaders in the sector to find out what air conditioning options and insights are available for schools in 2019.

Industry points to remember:

Daikin Australia’s air conditioning brand manager Lien Lam spoke to us about servicing tips for schools.

Having the air conditioners checked each year by a qualified service technician before more extreme seasonal conditions set in is ideal to make sure the systems perform at their best. Aside from this, remember to keep the air filter clean and the outdoor unit free of leaves and debris.

Today’s air conditioners have

many more smart functionalities as opposed to 15 years ago and this can be confusing. Aside from basic training, at a minimum depending on the system and model installed, principals should set timers and a reasonable temperature limit range for each season. If you have split systems with filters installed at your school, as a general rule, they should be cleaned every two weeks if the system is used during majority of the day when class is in session. In more dusty or polluted environments (for example, schools located near main roads), the filters should be cleaned more regularly as blocked filters can reduce a system’s efficiency significantly. A clean filter can lower your air conditioner’s energy consumption by anywhere from five percent to 15 percent. ►



All images shown are courtesy of
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◀ Understandably for principals, having control over how staff use the air conditioners is a priority to ensure there are no major surprises when they receive the energy bill for the quarter.

Advancements in control technology have given users the ability to access all kinds of functionality available in the air conditioning systems. This includes things as basic as timers to ensure that it switches on and off during specific times of the day, and days of the week, limiting how low and high the temperature



can go, even controlling it remotely via an app. If schools are concerned about energy bills during summer, one thing to note is that for every 1°C you increase the thermostat, it has the potential to reduce energy consumption by five to 10 percent.

Resident air conditioning expert at Alinta Energy Geothermal, Mark Langdon discussed the importance of indoor air quality.

Most education departments and authorities typically have a standard set point for temperatures based on comfort and energy efficiency. As a guide, 24°C in summer and 20°C in winter will offer comfort as well as efficiency in operation. Centralised controls provide schools with the ability to maintain optimum temperatures with classrooms as well as ensuring that they are being operated



in the most efficient manner. Central control also ensures systems are not operated when rooms are unoccupied or outside of school hours incurring costs unnecessarily.

Indoor air quality is as important as climate control in schools. The introduction of outside air internal space has cognitive benefits for students but low cost options within classrooms may not have the ability to do this. When selecting a solution for classrooms, it is important that the option has provision for introduction of outside air. ▶



All images shown are courtesy of Alinta Energy Geothermal



Whole school solutions with Fujitsu.

Research has shown that classroom temperature can interrupt learning and hinder academic performance¹. Warm or humid classrooms can decrease alertness, and cold classrooms can distract the mind as it reminds the body it's cold. The installation of air conditioning enables teachers to control the temperature of their learning environment to help their students focus.

Schools and other educational precincts generally have a broad range of needs when it comes to air conditioning applications. Fujitsu General offers an extensive range of solutions that are compact, efficient and reliable.

To deliver peace of mind for school management, Fujitsu also supports its products with a five-year parts and labour warranty and exceptional customer service. Fujitsu General Assist is an in-house customer care and technical support department, which focuses on delivering a high level of support and accessibility to all Fujitsu customers.

To ensure the optimum air conditioning solution to meet the unique requirements of your school, contact your Fujitsu General Business Development Manager.

Call 1300 882 201 or visit www.fujitsugeneral.com.au



AUSTRALIA'S FAVOURITE AIR®

¹<https://www.hvac.com/blog/air-conditioning-schools-essential/>



Image courtesy of Mitsubishi Australia

◀ A ducted geothermal system will have this option available.

Like all mechanical equipment, air conditioning systems will always work most efficiently when it is properly serviced. All air conditioning system manufacturers will have prescribed servicing regimes.

One of the key advantages of a geothermal ducted system is that they will require less maintenance than a conventional system, reducing the cost of equipment ownership.

The use of geothermal air conditioning systems is being recognised as a genuine energy saving option for schools both in Australia and globally. Through using the constant temperature of the ground, a geothermal system will provide consistently high efficiencies in comparison with a conventional air conditioning system. The removal of external fans also provides safety, design and acoustic benefits to schools.

We spoke with air conditioning specialist Ari Grimekis from Mitsubishi Electric about popular options for schools.

Wall-hung split system air conditioning is the most popular with schools due to price. They are the cheapest form of air-conditioning you can get and you just put them on the wall in the classroom, connect your piping and wiring

and that's it. The next option is a ducted system where you have a sealed unit in the ceiling but they can cost about 50 percent more and are more involved to install. Ducted systems have much better filters, a longer lifespan and better maintenance but the favoured school trend is for split systems.

A badly maintained air conditioning system may only last half as long as it should, so once a system is purchased, schools should enforce a diligent maintenance program undertaken by staff or contractors who know what they are doing. Maintenance

involves cleaning and taking out filters to wash, checking the heat exchanger and fan barrel to ensure they are not clogged with dust. If filters are not cleaned, the dust pulls through the filters and clogs the unit and in some cases the systems can't be salvaged. Keeping it clean should be a priority because keeping it clean goes hand in hand with energy efficiency and the life of the product.

I recommend maintaining your system every month. Proper maintenance could make the difference between your system lasting ten years or five years. A new system will have

up to 40 percent of the energy consumption of an old air conditioning unit so it is worth looking at replacing them purely on the basis of cost savings.

You can do a lot to reduce the energy costs of the school. Some schools use a motion sensor to detect movement and body heat so they know to turn on if a room is occupied and turn off when it isn't. I think the temperature has to be kept as close to 23 degrees as possible. It's a learning environment, so students should be comfortable and you shouldn't be sacrificing comfort for energy. ■



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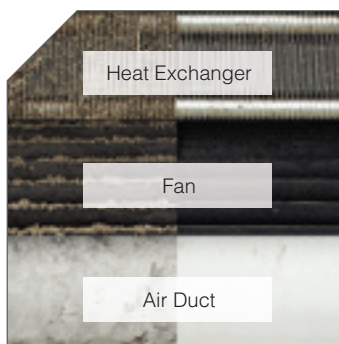
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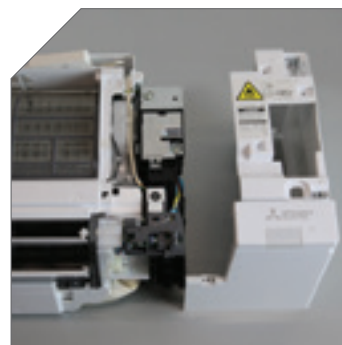


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Alinta Energy Geothermal INSTALL GEOTHERMAL AIR CONDITIONING at Mt Maria College



Brisbane Catholic Education's forward-thinking sustainability program includes the installation of geothermal air conditioning in their schools across South East Queensland.

They engaged Alinta Energy Geothermal to install geothermal air conditioning systems and the project began in the new performing arts building at Mt Maria College.

Used as the pilot school for the implementation of geothermal air conditioning, Mt Maria College is a co-educational secondary catholic school located in Mitchelton, Brisbane. With around 1000 students from Year 7 to Year 12, the school has a mix of heritage-listed buildings and modern classrooms.

When the school was designing its new performing art and learning block, they were looking for a much more efficient way of air conditioning their spaces. They sought to create a great indoor environment quality in which to teach and learn, and so

Alinta Energy Geothermal were introduced to the project.

With geothermal air conditioning systems now recognised as a genuine energy saving option for schools both in Australia and globally a productive conversation ensued... The Alinta Energy Geothermal system not only hit the right balance between upfront costs and long-term savings for the school but also provided an opportunity to showcase industry best practice in air-conditioning.

The Mt Maria project consisted of the installation of a geothermal air conditioning system in a two-storey building incorporating central areas with 11 interconnecting classrooms including dance studios, practice rooms, technology rooms. For a school where educational spaces are largely un-airconditioned it has been a step in the right direction and a "breath of coolness" welcomed by the college community.

After installation in Jan 2018, the system was monitored to capture the hottest months with the highest levels of occupancy. When reviewed by Calibre Consulting it was anticipated that the "additional costs associated

with the GeoAir system install will be recovered by the school in under 4 years".

This highly efficient system not only provides a solid reference for the future of the Brisbane Catholic Education's sustainability programme but also provides several other benefits to Mt Maria College. With less moving parts the geothermal system should reduce maintenance costs compared to conventional air conditioning units. It also looks good, being installed to undercroft of finished build and is safer for the students because there is no external fan on the condenser unit.

Tamara Crosby is the business manager at Mt Maria College and with two young children she certainly appreciates the importance of "looking after the world that we live in". She revealed the reaction of her students to the new air-conditioning system: "Praises sing when a class knows they are in the new block!"

She said: "And to know that we now have a staged rollout (over a number of years) to introduce 'GeoAir' to the other areas of the college is a much awaited and

welcomed plan. Students are eager to find out how the system works and how it is beneficial to the college and surrounds."

What has impressed Tamara the most? "How well the system works - definitely no complaints about hot classrooms in this new block! The benefits apart from cool air for our students and teachers is that the energy used to create this change in temperature is significantly reduced, in-turn has been a cost savings to the college."

Tamara added: "I love the fact that we are reducing the need of traditional non-renewable forms of energy and giving value not only to our community but to the global movement to look for alternate ways to source energy. The earth is an ever-constant, lets pray we all learn to look after it."

After the success of this project Alinta Energy Geothermal has been engaged to install the next geothermal air conditioning system as part of Brisbane Catholic Education's sustainability plan. ▲

For more information, please contact Alinta Energy Geothermal on 1800 896 598 or email geo@alintaenergy.com.au



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your first step towards a facility management strategy

By Mandy Clarke,
Industry Reporter

When it comes to facility management, your school needs to implement a program.

Either employ a facilities manager and team to keep it in-house, or reach out and source a high quality school facility management service to meet your needs. It's an area of school-life that must be prioritised, well managed to offer an impeccable service and keep on top of new technologies and trends.

A facility manager's role is to ensure that buildings and services meet the needs of everyone who uses them, vital when you have a duty-of-care to provide a safe and stimulating learning environment for children and teachers. Community expectations have reached an all-time high, pushing schools

to get the most value they can out of their budgets. In the past, schools and universities would employ cleaners, groundskeepers and catering staff directly; perhaps turning to contractors for specialist services like air-conditioning or equipment maintenance. But there has been a move away from this model as school needs have increased and technology has advanced.

Pros for outsourcing

Hand over your day-to-day facility management responsibilities to a service provider that has the expertise and specialised skills to perform tasks to a high standard.

Cost savings: facility management service providers have support, resources and buying power that is beyond the reach of most schools. Outsourced facility management providers also absorb employee costs like

wages, benefits, training and worker's compensation. With a customised, streamlined facility management system in place, you should experience increased efficiency across operations as a whole.

Cons for outsourcing

Unless you choose a collaborative provider, you may feel like you are handing over too much control, or that the new system isn't adequately suited to your school's specific needs.

Flexibility: discuss all available options with providers because contracts will differ. Long contracts are more likely if the outsourcing firm will be investing significant upfront capital. Always enquire about possible future upgrades and what level of flexibility is available in terms of scope, training and maintenance.

Miscommunication and troubleshooting concerns are

always prevalent when schools consider outsourcing: the secret is to find the right contractor for you, your team and your school.

How to strategise: industry viewpoint

We spoke with facility management expert in the field, Paul Amato, the national director of business development at Sodexo, about negotiating a new contract.

Dealing with school maintenance issues and food service can take away valuable resources from developing students, not only financially, but in terms of time and focus. A comprehensive facilities management (FM) program can enable schools to focus on their core strengths while dealing with a single point of contact to deliver specialist services in the timeliest and most cost effective manner using best global industry practices.



Facilities management strategies for schools

A solid FM strategy starts with mapping the operational and infrastructure needs of the school to address preventative maintenance, regular operations, and strategic improvements.

The first step is to identify pressure points in your school and form an integrated, cost-effective suite of options including critical services, foodservices, wellness programs, event management, cleaning services, grounds maintenance and landscaping, corrective maintenance, technical services and more. A service level and commercial solution can then be mutually agreed upon by setting appropriate bench marks, KPIs and performance measures. The more comprehensive your data is on current services and costs the easier it is for a specialist service provider to prepare a tailored solution and competitively price. If you don't have that data or are not sure what's needed, seek a trusted provider to work with to uncover that and guide you through the process.



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When all operational components are strategically planned and executed, schools experience not only the efficient daily operations of their facilities but also tangible benefits aligned to their key objectives including investment to the school, higher student enrolment, operational cost savings such as lower utility expenses, higher teacher and faculty retention. Consider carefully that an under investment in maintaining your assets now will shorten their life and lead to the need for costly earlier replacement and ultimately the increased cost of future maintenance in dealing

with a that backlog. There are strategies to deal with just these sorts of issues that lessen the pain of catching up.

Buildings are getting smarter and technology is getting more sophisticated: this needs to be managed effectively to avoid business disruption and to effectively leverage data insights. Data analytics is also one of the fastest growing trends in FM. The most popular systems are fully customisable and can monitor and measure all major manufacturers' building controls and equipment. Having the ability to remotely resolve system

failures often eliminates the need to dispatch a service technician, saving clients a tremendous amount of time and money.

Sustainability concerns for modern schools

Environmental services and energy management is a growing area where we are seeing more in comprehensive FM strategies for schools. For example, schools are now being graded by their communities for their sustainability policies, plans and benchmarks along with their commitments to incorporating 'green and earth-friendly' initiatives into their operations. ■

Reclaim your time and resources with Integrated Facilities Management Services

Dealing with school maintenance issues and food service can take valuable time and resources away from your core strengths and purpose.

A comprehensive Integrated Facilities Management (IFM) solution can meet multiple demands for your school with a

range of soft and hard FM services tailored to your needs: everything from cleaning and catering services, building and asset maintenance, waste and energy management, air-conditioning and lighting solutions, to security and grounds keeping.

Key benefits of Integrated Facilities Management Services

Cost savings: A strategic IFM solution can allow schools to reduce costs and predictably budget for

services without unnecessary disruptions.

Increased efficiency: Schools can benefit from an IFM service provider's expertise, volume savings, and simplified management of multiple services through one point of contact.

Access to innovation: As specialists in their trade, IFM service providers are positioned at the global forefront of their industry, utilising the latest

in equipment, technical expertise and best in class service delivery.

Better productivity: IFM services can provide staff and students with essential support and quality of life they need to thrive and be more productive and healthy. ▲

To learn more about IFM services for schools, please contact Sodexo National Business Development Director, Paul Amato, at paul.amato@sodexo.com

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Yarra Valley Grammar installs Eclipse Security system

By Mandy Clarke,
Industry Reporter

Victoria's inclusive and welcoming Yarra Valley Grammar is a place where students are inspired to achieve their best and teachers love teaching.

The school security system installed by Eclipse Security Systems is designed to enhance security within the school environment without disturbing the natural flow of this effective, community-centred learning environment in any way.

Set on a single 29-hectare campus, Yarra Valley Grammar offers a coeducational learning experience for students from early learning through to Year 12, supported by "talented and dedicated teachers who love what they do and know how to bring out the best in each individual". With around 1,300 students, the school is large enough to offer a diverse program, but small enough to provide a caring community feel.

School News spoke to Jane Macneil, the corporate services



Images courtesy of Eclipse Security Systems

manager for Yarra Valley Grammar who told us that she has worked with Eclipse security for number of years and will continue to because their systems "work well".

When Yarra Valley Grammar was building its new Research Centre, it was decided that an addition to the security system already fitted throughout the school was required.

Completed in June 2019, the new building consists of a library, classrooms, a chapel, open learning spaces and a reception area.

Jane told us: "We asked Eclipse Security to fit the same system that we used throughout the rest of the school because we like it. We love that the system is so easy to use and is keyless. All our staff have their

fobs programmed by a central system which can regulate access to areas of the school according to need.

"For instance, a certain area can have access limited to only a small number of staff but when the need arises other personnel may be granted access and the system is easily programmed to allow short term access to that area.

We appreciate that we can quickly and easily regulate access to areas of school... We also like that have been able to simply add to the system over the years."

Matthew Trofa was the Eclipse Security Systems security consultant who oversaw the project. He told us: "The security solution provided by Eclipse Security Systems was Salto Access Control and Hikvision CCTV System for the new 'Research Centre' building. Salto Access Control was installed on external access doors as well as internal offices, meeting rooms and storage areas. Hikvision CCTV cameras were installed to monitor access points of the building and the roof terrace."

Jane continued: "Our teachers are happy with this system because it makes it so easy for them to gain access to areas on a short term basis -



with just a simple request to our administration staff who simply go into system and grant access via the fob.

"I have been continually impressed by the ease-of-use of this system and how it improves efficiency during our working day. I am also impressed by how easy the system can be rolled out and the high standard of support we have received from Eclipse Security. They have proven themselves to be flexible and helpful and they worked well with the builders during construction of our new facilities." ■



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Using outdoor furniture in learning environments



Images courtesy of Felton Industries

By Rosie Clarke, Editor

Have you noticed how well-planned outdoor learning strategies make schools shine?

Students seem engaged, happy and the school stands out.

Many studies expound the amazing benefits to children's mental and physical health when they spend time learning and playing away from their usual classroom environment. When they are immersed in nature, embracing exciting adventures,

experiences and communities they grow and develop creativity, imaginatively and intelligently.

In Ken Robinson's 2006 talk, *Do Schools Kill Creativity?* he states: "We know three things about intelligence: One, it's diverse... We think about the world in all the ways that we experience it. We think visually, we think in *sound*, we think *kinaesthetically*. We think in *abstract* terms, we think in movement."

There are many reasons to create wonderful learning spaces within your school's outdoor

environment, so it makes so much sense. An inspired outdoor classroom area should be a consideration not just because children get so much from them, but because these spaces are also very practical. An ideal solution when schools need to expand their classroom space when class sizes increase, they can also reduce noise and maximise the use of school grounds.

School News looks at both creative and more traditional outdoor furniture ideas to help

you create stimulating, relaxing and creative learning spaces in and around your school. Furthermore, a dedicated outdoor area with the addition of protection from the elements provides an ideal learning environment for hands-on lessons, especially conducive to messy art projects.

Experts tell us schools should ensure they meet Australian Standards and safety guidelines so look for ISO 9001 accreditations as an international standard for quality and consider what patented safety features items have.

Top tips for schools in the know:

Think carefully about the design and layout of your outdoor spaces and get advice from specialised suppliers; why not include your students as well?

Create some comfy meeting points to encourage peer group communication and help students build relationships; use a variety of benches, seating and equipment to construct gathering places for learning, playing or relaxing. Experiment with 'buddy benches' and other novelty seating ideas. ►





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Secret life of the playground auditor

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By Rosie Clarke, Editor

Every surface-type requires a rigorous maintenance schedule to help prevent injury and help satisfy compliance standards.

But is non-compliance the only factor in assessing playground safety risks? We tracked down an auditor to find out what schools should know.

Overall, we found that in-depth inspections should be taken out at least once a year; particularly

if you have organic surfacing that will require topping up. Look out for signs of wear-and-tear in synthetic surfaces as well as play equipment and any shade installations. Of course, if a child sustains an injury on the playground this should be investigated immediately,

regardless of how minor the injury.

We spoke with the playground safety expert and auditor at Bruce Stephens Playground Services, Bruce himself, to find out more about audits and undersurfacing.



Images courtesy of Felton Industries

◀ Consider furniture that has a dual purpose. Ask whether something can also be used for outdoor dining or to encourage social engagement? Or choose specialised seating arrangements that include items like bike racks.

Remember to provide a variety of shapes and sizes of outdoor seating around the library, outdoor cafeterias, galleries, amphitheatres and any other spaces that students use.

Creativity flourishes in creative spaces: dare to be different.

Safety must also be a priority. Your furniture choices must be sturdy and durable; consider the amount of use, the weather conditions and make sure your supplier offers quality options that are built to last.

Maintenance is important. Find out how to care for your furniture and take that into account.

Installation: does your furniture need to be cemented into the ground or bracketed to a wall?

Graffiti: can it be easily removed from your chosen furniture?

We think that perfect outdoor furniture for educational premises is only limited by budget and lack of creativity.

We spoke with outdoor furniture supplier specialist Gus White from Felton Industries about popular options and trends for schools.

"Current trends for furniture in outdoor areas include the use of colour to affect mood and learning, minimalist design to provide a sense of simplicity and order, and the importance of environmentally friendly

materials that are recyclable and reusable and durable.

"Using colour not only brightens environments but can influence mood; warm colours are motivating while cooler colours help keep students calm and relaxed. Providing adequate and well-thought out seating in outdoor areas helps create positive environment for students during their break, giving them a space to meet, start a game, eat, talk and interact with friends.

"Well-positioned benches,

Playground audits look closely at both the play equipment and the undersurfacing material to check whether they are still in a safe condition and meet requirements of the *Australian Standards* for playground equipment.

Conducting playground audits is a specialised task that needs to be completed annually, particularly important in schools where the play equipment is used heavily and has high levels of wear and tear.

Beware of playground audits offered by playground companies as their results and advice may not be impartial and may be used as a means for them to generate additional business by selling you a new play equipment. Playground audits should only be completed by trained, experienced and independent playground auditors.

After having your playground audited, it is important to understand that compliance with *Standards* is not mandatory and can be costly and hard to achieve, particularly on older equipment manufactured prior

Is non-compliance the only way to assess playground safety risk?



to the *Standards* changing. The most important thing is that the play equipment is in good working order and does not pose a safety hazard to the children. Equipment that no longer complies with the current *Standards* will not necessarily be unsafe and may not need to be modified or replaced.

When there is a non-compliance identified on a play component, the issue is risk-assessed to decide whether it poses a serious safety risk and whether modification or repair or replacement is required. This is where the services of an experienced and independent playground auditor is essential.

Regarding playground undersurfacing material, there is no perfect playground surface and they all have different

costs and pros and cons. Many schools near the coast use sand as undersurfacing because its cheap and readily available but in other areas, pine mulch is the cheaper, more readily available alternative. Loose materials like these generally offer very good levels of impact attenuation when maintained at the required minimum depths, are nice to play on as they don't get too hot, are natural and sustainable. However, they will need to be maintained regularly, raked back into position, levelled, depth maintained, etc., and they can deteriorate over time, needing replacements or top-ups. When selecting loose undersurfacing materials, ensure they are suitable for use in playgrounds. Sand, for example, can damage metal and fibreglass surfaces.

Unitary surfaces like wetpour

rubber, rubber tiles or rubber matting, sometimes covered with synthetic turf, are quite expensive initially but generally involve less on-going maintenance. They are not maintenance-free and will still need regular inspection as the material can wear and deteriorate over time, requiring periodic repairs. *Standards* demand they be impact tested at both installation and at three-year intervals to ensure that they continue to provide adequate impact attenuation. Rubber or other synthetic surfaces can also get quite hot in warmer months and may not be suitable in all locations. Some rubber surfaces are also not recyclable and may have to be replaced when worn out rather than being patched or repaired.

As a result, a combination of both loose natural undersurfacing material and unitary surfaces within the school playground works best. Again, an experienced and independent playground auditor can help you decide which playground surface is best for your school's situation. ■



Image of Felton Industries

outdoor settings and sheltered seating are great facilitators of social interaction and a buddy bench takes this one step further, offering a safe positive and happy place for kids to meet and become friends." He further advocated for schools to look into aluminium over timber outdoor furniture, citing moveability, durability and low maintenance.

Is modular seating still popular?

This is one trend that's still on the

rise. "Modular seating provides great versatility due to its adaptive nature and standardised ease of connectivity, so it can be readily moved and adjusted in accordance with specific or changing outdoor requirements.

Benches are good examples of modular seating as they easily fit together and can be arranged differently, whether to form an interesting snake-like set up in a children's playground or connected in a circular formation around a tree." ■




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- Assistance with arranging repairs or modification.
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