RISING STARS

Education's next generation of leaders

TECHNOLOGY REPORT
The latest education
technology in focus

PEAK PERFORMANCE
Is the 'Pygmalion Effect'
holding you back?

THE BIG INTERVIEW
Roger Herbert, Timbertop –
Geelong Grammar School

TECHNOLOGY REPORT

AN EXPANDING UNIVERSE

The explosion of technologies available to today's educators means students have never had more opportunity to reach their potential. *The Educator* speaks to some of the most interesting providers, to see the problems they are solving for schools

THE K-12 education market today is in the midst of its own technology 'Big Bang'. With a fast-expanding universe of technology options available, innovative educators have never before had so much choice to make the most of their students' education.

Sean Richards, director of Alaress and Schoolbox, sees a future for education that will move towards a much higher level of gamification and personalisation.

"We are moving the company towards being more adaptable to individual student abilities and needs. We see a time where teachers will be acting more as mentors and tutors rather than lecturers, as they'll be helping students with problems they are facing in class but not necessarily telling them all the information they need."

Students will also learn more collaboratively, mimicking future work environments. "Today's workplaces require people to be adept in collaborating, working in project teams, on things that are bigger than one person," he says. "Education will increasingly be designed around training students how to work in teams, break things down into smaller parts and achieve individual successes within a larger project."

Technology is the catalyst for such innovations. Whether it's the evolution of an LMS, better and faster IT infrastructure and networks, a vaster range of content like video on demand, or better equipment in the classroom, educators are now using a range of products to connect student learning today with a better future tomorrow.

In this technology report, *The Educator* takes a look at just a few of the interesting products and services that are making waves in school classrooms across Australia. While budgets will always be limited, there's one thing that's certain: for every problem schools face, technology and the market are providing a solution.
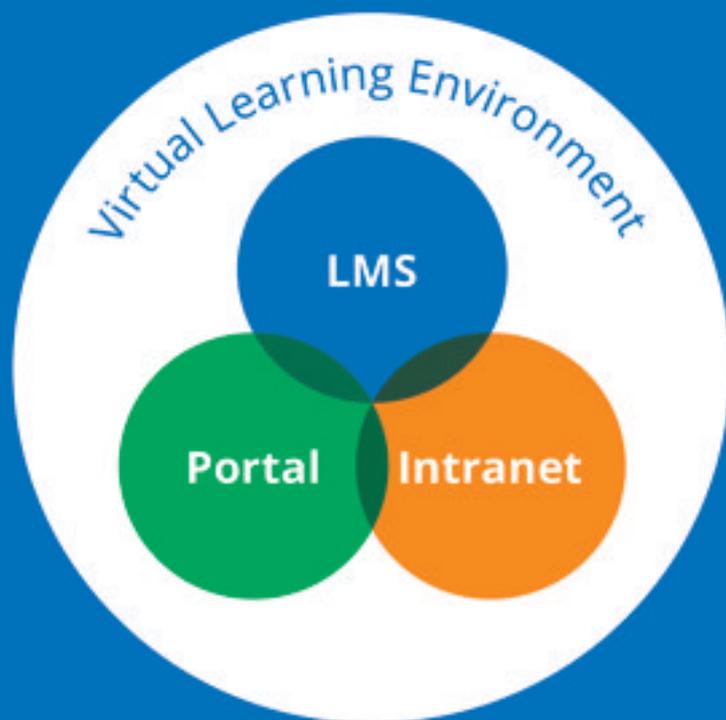
Technology to transform K–12 schools

Enhance learning, collaboration and communication
at your school with Schoolbox

Schoolbox is a virtual learning environment (VLE) for K-12 schools.

It's a unique all-in-one learning management system (LMS), portal and

intranet. Schoolbox is self or cloud hosted, integrated, flexible and secure.

TECHNOLOGY REPORT

SIMPLY THE BEST

Choosing the right systems for your school can be confusing, but as Schoolbox's directors know, keeping things simple is the easiest way to get the best result for your students

ALARESS DIRECTOR James Leckie is often an eyewitness to the confusion schools face when trying to choose a system that will best suit their vision and their aspirations for students.

"The main point of confusion is there are a number of products out there with quite a lot of functionality overlap – and they don't all overlap in the same places," Leckie says. "So you might have a student management system with some additional communications and LMS-type functionality, but it can be confusing to figure out how that might compare with a dedicated LMS, or to find the right mix of solutions that align with each other."

Alaress's Schoolbox platform is one of the options available. In the end, Leckie says the best way for schools to engage with the technology market is to keep things simple.

Form and function
Technology is transforming the way schools manage and interact with their communities. The core systems on offer break down into three types of functionality schools usually consider:

Student management
Primarily housing and managing all forms of student data, student management systems contain resources like attendance records, assessment results, scheduling, and relationship information. They also handle school financial management.

Communications
Schools typically have a website or intranet, often combined with email or sending printed paper home. To deliver on a communications and engagement strategy, schools need a platform to communicate with parents, students and other stakeholders.

Learning management
An LMS is primarily built to manage and enhance all aspects of a student's learning journey, to ensure student learning outcomes are reached. It can include a range of functions, such as content management and classroom management.

Many schools start their systems search with a desire for a modern LMS. However, Leckie warns that an LMS in isolation is not the answer.

"A stand-alone product that doesn't integrate into the other systems doesn't make the most of the other opportunities that are available."

Challenges of choice
Making a decision between the different systems and functionality on offer can be daunting. Alaress director Sean Richards says schools first need to establish what they really need.

"My recommendation to schools is to look at the high-level goals they are trying to achieve. Is it to improve communications, simpler in-house processes or more up-to-date information?

"After establishing those high-level goals, schools should then break the decision down into clearly defined system requirements. What we often find is schools are exploring their requirements as they go along, and the situation can become a bit of a muddle."

Schools can also ease the challenge of choice by simplifying their requirements.

"Sometimes we see 100-plus requirements in a tender process. It's not feasible for a solution to address them all – or for a school to review them all – with any sort of quality," Richards says.

If schools are able to distil their requirements down to a key list of about 10 or 20, they can vastly simplify the process of reviewing the market solutions on offer. "When you have 100-plus requirements and you are reviewing 10 products across all of those 100 requirements, it can be very difficult to understand which does which."

Best of the best
If the end goal is technology best practice, what does that look like? Schoolbox's directors say a few guideposts can chart the direction towards a fully functioning ecosystem.

schoolbox

Culture

Schools need systems to be ingrained within their culture. "Often technology can be perceived as an add-on, or something optional. The success of a product is determined by how business-critical it becomes to the school," Leckie says. The best systems become 'cultural assets' that are just a regular part of everyday school life, and in the end they serve to support the core values schools have. "If it's part of the culture, the rest can follow."

Technology

There are two must-haves when it comes to systems technology. The first is making the platform available on all devices. "It should be technology agnostic. You shouldn't have to find the right device or right combination of things to make it work," Leckie says.

The other is integration. "It should be integrated into the existing information the school holds, a one-stop shop where everything is there, everything is up to date, and it is always the place to go to find out the most relevant up-to-date information. If you have separate systems and have to hunt around for data, you are losing the high level of value that that one system has."

Leadership

School leadership needs to understand the new technology and tie it back to their strategic goals and KPIs, according to Richards. "That way, they will recognise to achieve those goals they need to resource the product on an ongoing basis and ensure they build that culture through the school."

With leadership understanding and direction, schools open themselves up for better measurement. "For example, they can track the communications going out to parents and how many of them are reading it. This level of measurement is something new to schools but is important to the success of a product."

Learning

In the end, it all comes down to student learning outcomes. Best practice means that schools are actively looking at how to use their systems to transform the way they teach and deliver the curriculum for students. That increasingly means delivering and interacting with content

WHAT'S NEW IN THE BOX?

Schoolbox is an all-in-one learning management system, portal and intranet that continues to evolve to help schools and students share, teach and learn online. So, what's new in the box?

UPGRADES	INNOVATIONS
All devices Schoolbox is now available on all devices, with development over the last 12 months seeing the platform move from being laptop and desktop friendly to having all features and functions available on mobiles and tablets. This makes the system responsive to each device, suiting the likes of parents, who research has shown are high mobile users.	**Personalisation** Schoolbox is now available on all devices, with development over the last 12 months seeing the platform move from being laptop and desktop friendly to having all features and functions available on mobiles and tablets. This makes the system responsive to each device, suiting the likes of parents, who research has shown are high mobile users.
Rubrics Schoolbox has rebuilt its entire rubrics system, in an effort to establish best practice feedback on student assessments for both parents and teachers at schools. Rubrics demonstrate what students have achieved in assessments across a range of set criteria, and enhancing them for individuals and cohorts paints a powerful picture of where teaching and learning can be improved.	**Whole child** Schoolbox is continuing to expand the breadth of its reach in areas like pastoral care and sports, to ensure it captures more data that can be used to paint a holistic picture of how students are engaging with a school. Assisting with diagnosing issues within and outside the classroom, this fits well with schools that priortise the broader school experience rather than classroom results.

online, encouraging more collaboration, and pursuing a flipped classroom model in which students are able to make their own progress through the curriculum. "Having the technology and training to support those developments in learning is critical," Richards says.

A big fish

Schoolbox's directors warn any procurement process takes time. In fact, the scope of the undertaking is often underestimated, which can affect the outcome of the project.

"Schools often don't realise just how much something like this touches, how many people within the school community, and they need to be able to manage the process effectively," Leckie says. "For example, a school may indicate they want a new system up and running in 12 weeks, without knowing how long a project might actually take. There are some unrealistic expectations placed on themselves, and their external suppliers, to support that."

Another pitfall can come from not involving the right stakeholders early on. This can be a result of projects coming out of different departments, like an IT department with a budget to spend, a principal trying to make a difference to teaching and learning outcomes, or even a marketing department looking for better communications with stakeholders. "Often they don't engage all of the appropriate stakeholders at the beginning of the journey," Richards says.

Given the pitfalls and confusion, Richards says engaging an Australian company like Alaress means schools gain the 'big fish' treatment it can provide. "We are primarily interested in local customers. It's better to be a big fish in a small pond than a small fish in a big pond."

RIGHT CLICK

Finding curriculum-relevant videos to use creatively in classrooms can be a resource-intensive exercise, but one thing's for sure, video is here to stay

WHEN EVAN Clark first launched educational video content company ClickView 13 years ago, he was asked why a student would ever watch a video on a computer.

Today, in a new age of video saturation led by YouTube, schools are more likely to ask how they can sort through the huge amount of video available to them online to come up with curriculum-relevant material to use in the classroom.

Video still has a negative reputation in schools, having long been seen as the domain of the 'lazy teacher' looking to replace themselves for a lesson. However, Clark says educators increasingly realise video is one of the richest forms of communication they have available, conveying more than a textbook or static image ever can.

"The perception of video is changing. The best educators are now using short snippets of video to increase student engagement, add a bit of visual stimulus to the classroom environment, and in doing so are adding in a new way to collaborate."

Used by 1,500 schools, ClickView has focused on eliminating many of the sticking points holding schools back from using video in the classroom, as well as helping them build, curate and store a bespoke library of educational videos.

For example, it eliminates the time-intensive process of searching for relevant videos.

"Unlike a document, you can't just scan a video to see if it's of value to students. You might need to watch a whole 30-minute video, only to find it's targeted at US students or that it's aimed more at primary schools than Year 8," Clark says.

Then there's ClickView's very own Albert. "Instead of asking teachers to search for videos using keywords, we have our own curriculum
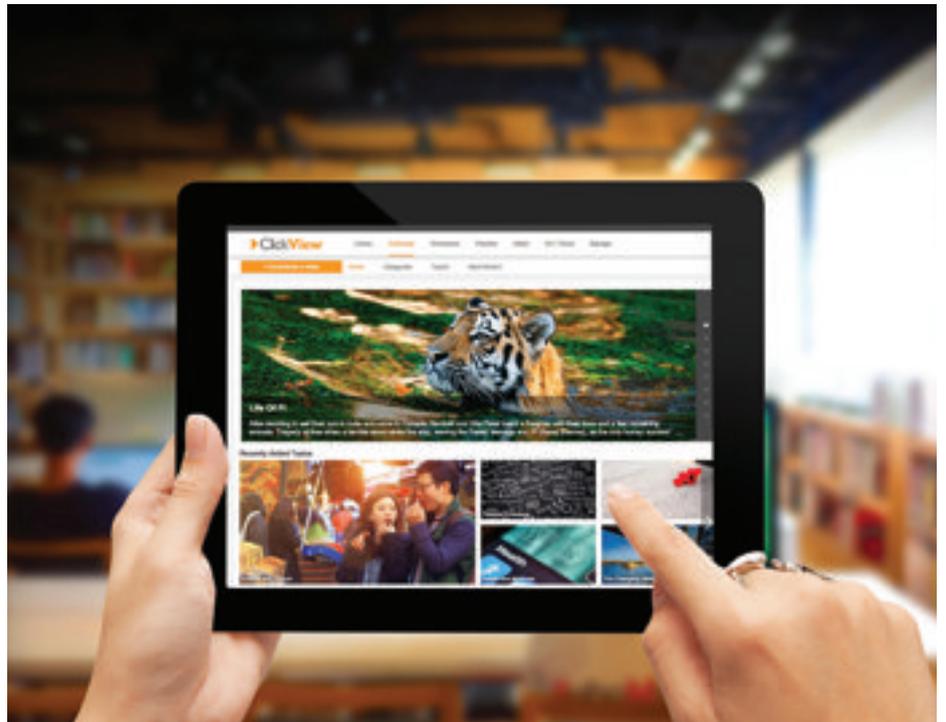
"The perception of video is changing. The best educators are now using short snippets of video to increase student engagement"

search agent Albert, who is able to go through a school's video library and deliver results based on the part of the curriculum and specific curriculum objective that a teacher wants to teach," he says.

Schools also avoid video because of problems with bandwidth and data traffic. Rather than have 30 children streaming from the internet, ClickView stores a school's video library within the school, using the school's local area network. "When a student goes home and does flipped classroom homework, our system reroutes the video stream so that it is coming from the video stores in the cloud," he says.

Clark says schools can get up and running fast with the existing ClickView library, as well as by crowdsourcing from the 23,000 videos available via ClickView's exchange platform. Schools can then add to this by creating their own video content, whether that's lectures, flipped classroom activities or video recordings of any type.

TECHNOLOGY REPORT

CREATING EDUCATIONAL CONNECTION

The space between a student question and the information that can answer it is closing fast, thanks to the power of a network creating educational connectivity

NICK CROSS used to work in the education sector as a school director of learning technologies, but as education outreach manager at network provider AARNet, he's seen the game of school internet connection change – and schools know it.

"It's no longer all about just having that piece of string connecting your school to the outside world. Increasingly, the capabilities and resources schools use are all in the outside world, whether that's student resources, school administration systems, or even where they store stuff. When everybody needs to be able to get to everything from wherever they are, it creates a whole set of challenges," Cross says.

Widely regarded as the founder of the internet in Australia, AARNet works with 850 K-12 schools to deliver a unique set of ICT capabilities in line with its education mission. Nationally, AARNet interconnects universities, the CSIRO, and other organisations like hospitals, vocational training providers and museums, all of whom have a research and education mission or interact with the education sector.

For schools, this primarily means getting access to a powerful, custom-built IT infrastructure, in the form of fibre optic links across the country and major metropolitan cities. But as Cross sees it, it's more than that – it's about reducing the space between a student idea or question and the information needed to answer it.

"It goes from one end of the spectrum – the enquiring mind with a question in the classroom, or on the school oval, accessing the internet from a phone or a tablet, to the other
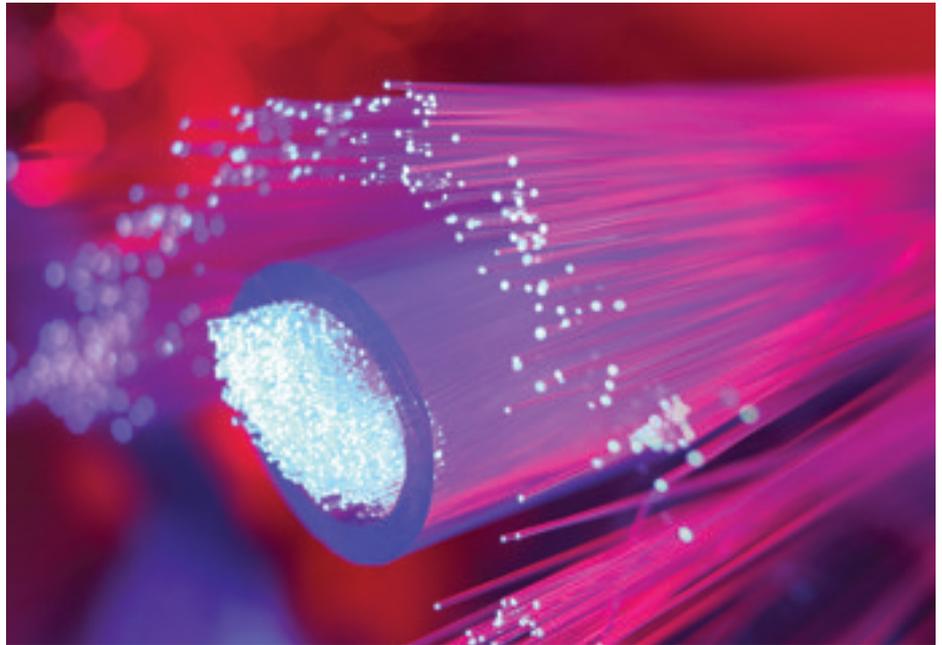
> ## "When everybody needs to be able to get to everything from wherever they are, it creates a whole set of challenges"

end – how do they get to the range of answers they need?" he says.

Building a custom access layer in its network – or the 'plumbing' – AARNet then works with schools to advise on other infrastructure requirements, like wireless access points and the local network, and works with the network's content providers, institutions and cultural organisations to bring them closer to students.

With the vast amount of data set to be used in schools of the future, Cross says more schools will need specialist IT infrastructure to deliver that. "Schools build centres for maths, or music, specialist facilities that accommodate the learning outcomes they are looking for. It's the same at the network level. Regular networks are like a tin shed – they're big, there's a concrete floor, you can use it for whatever you want – but it doesn't have the same impact as a concert room on a group of music students."

ALL DEVICES IN THEIR PLACE

Having the right devices is one thing, but where do you put them? Every device needs to be stored, charged, transported and secured

THE EXPLOSION of digital devices in schools is doing wonders for student learning, but it is also creating a range of associated – and unanticipated – problems for schools.

PC Locs head of marketing Vlad Vasilciuc says just one of these is security, with the need to protect all of those new devices from the risk of theft and damage. "Back in the day when I went to school, we had a dedicated, locked computer room. Now, it's more common to have a leasing arrangement from the school library."

Founded by teacher Paul Simons, PC Locs aims to solve the storage, charging, security and transport challenges that schools often forget to address when purchasing devices. The company started out with a product that secured desktop computers, but Simons has since expanded its range to include carts, charging stations and wall cabinets.

PC Locs' carts are designed to house and transport specific types of devices, like laptops and tablets, or specific brands purchased, like iPads and Chromebooks. The majority of carts also come with baskets, a feature popular among teachers.

Vasilciuc says the carts help with common issues, like transportation. Depending on where the classroom is, moving a batch of devices from a library while navigating stairs and distances can be a risk for devices, staff and students, particularly if they are being juggled by hand or under arms. Baskets also offer transport versatility.

"Both teachers and students can help in retrieving devices using the basket, and it's a lot faster and safer than pushing a cart around or carrying devices one by one, or five

Moving a batch of devices from a library while navigating stairs and distances can be a risk for devices, staff and students

items at a time in your hands; it's just not as easy to drop," Vasilciuc says.

Time is another logistical problem. PC Locs produces in-classroom charging stations to cut down on transportation time, which can be mounted as wall units or desk units. "There is a lot of time wasted before and after class getting and returning devices from where they are stored to the classroom," Vasilciuc says. "Teaching time is reduced a lot, and a 50-minute class could end up becoming a 40-minute class."

PC Locs has also moved to meet the needs of schools with BYOD programs by creating charging lockers that keep individual and varied student devices secure.

TECHNOLOGY REPORT

A CLEARER PICTURE

Learning in the classroom is moving from old projector whiteboards to digital touch panels, as students demand the clarity of experience they get at home

IT WASN'T so long ago that teachers favoured blackboards and chalk as teaching aides. But in this fast-paced, technology-driven world, that seems a lifetime ago.

While interactive whiteboards with projectors have been used by schools in recent years, A Brighter Image's Simon Webber says this technology is now out of date.

"They are mostly obsolete now, as they've really been overtaken by touch panels," he explains.

"With touch panels, you really have those two devices in one, rather than having to have a separately mounted projector in the classroom."

In a time when students have become used to the clarity and sharpness of images on their iPads or LCD TV screens, projected images no longer seem quite as sharp, and students can more easily make sense of the 'big tablet' in the classroom.

Projectors have also had inherent problems with stabilisation and image shadowing. "It's just not as crisp or clear an image as you have on a touchscreen. On the touchscreen, the image is of course generated by the device itself," Webber says.

The next generation of touchscreens have specification advantages. For example, they have more inbuilt connectivity, with multiple HDMI and VGA inputs, and require less maintenance than projectors, which need lamps changed every 3,000 hours.

Webber says schools also appreciate that touchscreens can be used with mobile or motorised stands in the classroom, or fixed in place on walls at different heights; and that they can be used, much like a tablet, more creatively for interactive activities.

"They are just more engaging for students. It's more exciting for them, and there is more

In a time when students have become used to the clarity and sharpness of images on their iPads or LCD TV screens, projected images no longer seem quite as sharp, and students can more easily make sense of the 'big tablet' in the classroom

flexibility in the classroom for the teacher," Webber says.

A Brighter Image still sells whiteboard projector technology, but Webber says the company is encouraging touchscreens and gradually schools are upgrading.

"A lot of schools still have projectors, but it is legacy technology. Schools can be hesitant to change, given there is also a cash outlay when they upgrade, but it is going to happen eventually. It's just a matter of when their budget allows," Webber says.

"It's not the end of the world, but projectors are not quite as user-friendly and the images probably aren't as crisp and clear as they could be," he adds.

🎒 BYOD TO LAST

BYOD is putting the power of technology into students' hands, but expensive devices – and school budgets – are at risk of damage from day-to-day use

WHEN MAZENOD College introduced a parent-funded 1:1 laptop program back in 2010, the school went down the path of choosing a school-nominated device, putting 14-inch-screen HP laptops with a weight of 2.2kg in the hands of students.

However, they were left with a challenge. Given the weight of the devices, how would students carry them, and how would they reduce the risk of wear and tear? It's a common problem that joins a long list for schools pursuing 1:1 programs.

"While 'BYOD' and 'Choose Your Own Device' models can be highly beneficial to students, staff and parents, there are many considerations that must be taken into account to ensure a smooth transition across the board," Targus general manager Jay Turner says. "Attention to details like how to protect laptops, tablets and mobile devices, and ensuring a defined usage policy is in place before implementation are as important as network compatibility and updating IT infrastructure," he says.

Just like Mazenod College, one of the important decisions schools and parents need to consider when embarking on a BYOD program is how to protect devices from the everyday knocks of school and home life. Turner says this has a direct impact on school expenditure on replacement devices and repair costs. "It also prevents insurance premiums from rising, and means children will not fall behind with their work because they do not have a fully functional device," he says.

The answer for Mazenod turned out to be Targus bags. The school had elected to maintain its IT support in-house, and wanted to keep costs down by providing support and repairs itself, as well as by reducing the amount of repairs. As a target, Mazenod College was

Given the weight of the devices, how would students carry them, and how would they reduce the risk of wear and tear?

managing its program so repair costs would not rise beyond $150 per laptop, to maintain its low premium with the insurers.

Targus collaborated with Mazenod's IT team to provide its patented T.A.N.C. design bags, which the company continues to improve year-on-year. The strong, fit-for-purpose bags have reduced the amount of repairs needed to student laptops, and the college recently deployed an updated T.A.N.C. design for all students in November last year.

Mazenod's IT manager, Hugo Van Niekerk, notes that cost was one of the factors in the decision. "It's an economical solution that allows you to be agile and adapt to the challenges that the student day will throw at you," he says. 📞