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EduGrowth

The Australian EdTech Market Census 2020
COVID-19 update

July 2021

EduGrowth conducted the Australian EdTech Market Census in 2020. This is the third Australian EdTech Market Census conducted by EduGrowth since 2017.

EduGrowth and Deloitte have brought together the findings from the Australian EdTech Market Census in this report. This report also includes spotlights based on interviews with EdTech organisations. These organisations have been selected by EduGrowth as examples of EdTech organisations established in Australia, or by Australians servicing domestic and export markets around the world.

Contents

Survey context and methodology

EduGrowth is Australia's education technology (EdTech) and innovation industry hub, facilitating connection and collaboration among the EdTech industry locally and globally. EduGrowth launched in 2016 as a national not-for-profit peak body, with a vision to transform global communities by enabling the growth of Australian EdTech.

Reflecting the Australian EdTech market as a vibrant and thriving community of start-ups, EduGrowth launched the Australian EdTech Market Census in 2017. The aim of the EdTech Market Census (the EdTech Census) is to understand the Australian EdTech ecosystem; the nature, challenges, triumphs, and forward plans of the EdTech industry. The most recent edition of the EdTech Census was issued last year, reflecting sector trends in 2019.

Deloitte and EduGrowth have engaged with EdTech organisations to understand how the sector has been impacted by the COVID-19 pandemic.

As such, this report represents an update to the 2019 EdTech Census, and is focused on education technology start-ups within Australia who are currently running an EdTech company.

For this update, 186 respondents have been surveyed including:

- 150 founders or employees of an EdTech company (81 percent)
- 14 individuals or teams with an idea for an EdTech company they plan to launch in the next 6-12 months (8 percent)
- 22 individuals in related fields of education or technology, that are not involved in EdTech or planning to establish an EdTech company (22 percent).

EduGrowth estimates that Australia has approximately 600 EdTech organisations[1]. As such, the sample size of 150 EdTech founders or employees who completed this survey provides a confidence level of 95 percent.

EduGrowth would like to take this opportunity to sincerely thank all the participants that took part in the survey, their founding members and the entire EduGrowth community. Each and every participant's continued involvement ensures that we can illuminate and explore key trends, insights and findings across the growing Australian EdTech sector.

Glossary of terms

What is EdTech?

For the purposes of this report, EdTech is defined as technology solutions that facilitate or improve teaching and learning outcomes. This includes software, hardware and other solutions that support the education value chain.

Examples of EdTech products

Examples of EdTech product categories include (but are not limited to):

- online courses and remote learning
- learning and content management systems
- teaching tools
- student support and administration platforms
- assessment tools
- educational games
- job readiness services
- ranking and review services
- accreditation services
- micro-credential platforms
- enhanced learning services through virtual reality (VR) or augmented reality (AR).

EdTech business models

EdTech organisations distinguish themselves not only by the solutions they offer, but also by the business models they use to deliver them to the market. The business models of this year's survey respondents include:

Business-to-business (B2B) – Selling services to education providers or other businesses.
Business-to-consumer (B2C) – The traditional model of selling services directly to consumers.
Business-to-business-to-consumer (B2B2C) – Reaching consumers via partnerships with other organisations.
Business-to-government (B2G) – Selling services to federal, state or local government agencies directly or indirectly involved in education.

1 EdTech overview

The importance of a good education is well understood, and there is a growing body of evidence that demonstrates the role of education in yielding higher incomes for individuals, as well as the contributions it makes towards social capital and long-term economic growth[2]. Education has also expanded significantly. The International Institute for Applied Systems Analysis estimates that the number of people with secondary or post-secondary education will have increased tenfold and will reach 4 billion people by 2100[3]. Over the next 10 years, the global education industry is estimated to grow by 40 percent and reach a total value of $10 trillion[4].

EdTech has great momentum but is building from a low base

The education sector has traditionally been under-digitised, with consistently low levels of technology expenditure. In 2018, EdTech spend made up only 3 percent of total education expenditure, and over 80 percent of educators indicate that insufficient budget is allocated to technology in schools[5].

However, the prospect of increased digital investment holds promise for both students and educators. Recent studies show improvements in education outcomes through personalised blended learning. EdTech unicorn Yuanfudao is an example of a learning application that uses artificial intelligence (AI) to not only provide tailored learning, but collect valuable information to assist with teacher workload and the overall experience for both educators and students.

As the benefits of EdTech become more widely researched and documented, digital spend in education is expected to rise and double over the next five years to reach a total of $342 billion[6].

Demand for digitally-enabled education is driving an EdTech wave

Although traditional education systems have struggled to innovate rapidly enough to meet demand for digitally-enabled education, the technology boom of the 21st century presents new and emerging opportunities to meet this demand through leading and emerging technologies. The *Cutting-edge technology in the spotlight* section of this report explores this further through three examples: digital reality, AI and analytics, and blockchain technology.

Changing student expectations and globalisation will also drive demand

Perceptions of education are shifting – from a rite of passage to a lifelong experience. With greater numbers of workers and degree-educated professionals returning to formal education to develop their skills, flexible delivery is becoming critical and attitudes toward online and remote learning are changing.

The globalisation of education, on the other hand, provides consumers and prospective students with increased choice. In turn, students are demanding more proactive, personalised and connected education experiences, comparable to those they have with other service based sectors.

Private investment is critical to the success of EdTech

While governments are still widely considered to be responsible for funding (and providing access to) quality education, education spend differs from EdTech spend.

As governments and providers experience financial pressure in the context of COVID-19, more immediate operational priorities are naturally taking precedence over emerging technologies.

Accordingly, the opportunities for EdTech organisations rely on the support of private investors. At the beginning of 2010, global venture capital investment in EdTech was valued at $500 million. It has since reached a high of $8.5 billion in 2018, with investment heavily concentrated in China and the United States[7].

As the private and public benefits of education influence global and national development agendas, both private equity and institutional investors are looking to education as a core part of their impact investment strategies.

It is time to prepare for an EdTech future

Despite progress and development, wealth, gender, ethnicity and location are major determinants of access to quality education. Fewer than 50 percent of the world's poorest children have completed primary school[8]. COVID-19 has highlighted that access to technology can create further barriers when education is delivered and supported digitally.

While innovations are reducing the cost of technology, there is a need to be mindful that EdTech has the potential to widen the education inequality gap as well as to close it. Students require access to technology as a starting point, and this is especially crucial if EdTech is to support opportunities in emerging markets in Africa, South America and Southeast Asia, where large populations of underserved students reside.

More can be done to provide access to technology *for students and teachers*. Indeed, 59 percent of educators have expressed a need for assistance in digital education[9]. In this context, programs and support mechanisms that enable the integration of technology in education will become crucial. The true value of EdTech lies not in its use, but in *how* it is used.

2 The Australian EdTech market today

The Australian EdTech landscape

The Australian EdTech sector has experienced significant growth and increased maturity over the past three years. EduGrowth estimates that there are approximately 600 EdTech organisations founded in Australia or by Australians servicing the domestic and export markets around the world[10].

The economic impact of EdTech

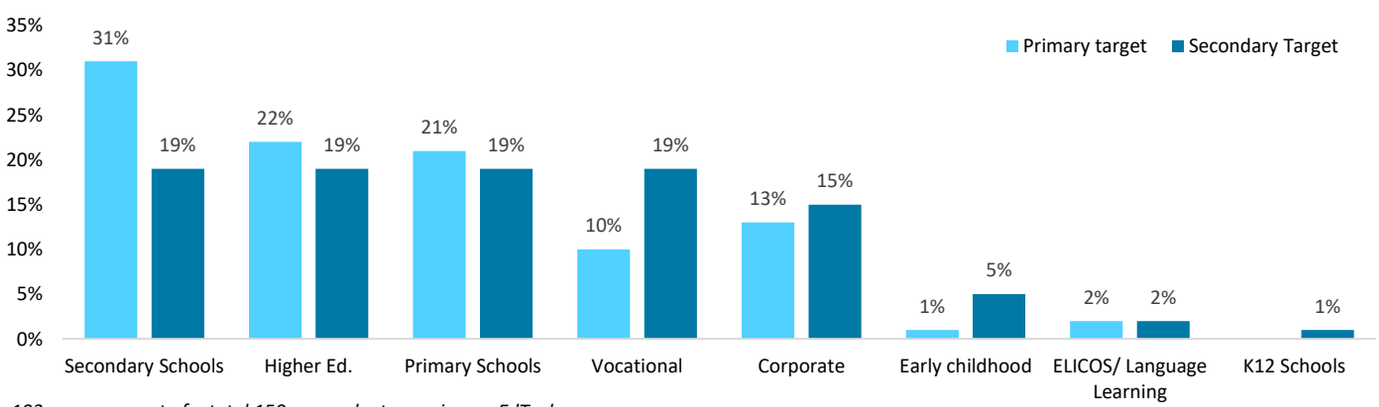
Education is of huge economic importance for Australia and, in non-pandemic times, is our third-largest export. It is also one of the top industries for the employment of technology workers, which is reflected in the number of EdTech employees nationally – estimated by Austrade and EduGrowth to be around 13,000[11].

Australian EdTech solutions

The data captured in the Australian EdTech Market Census 2020 (EdTech Census 2020), shows that Australian EdTech organisations continue to service all parts of the education system, with the proportion of organisations focused on higher education (versus primary or secondary education) steadily increasing since the first EdTech Census was undertaken in 2017 (see Figure 1).

EdTech Census 2020 found that Australian EdTech organisations are focused on delivering innovative solutions that directly impact teaching and learning. The most common product offerings are online courses and remote learning services, educational content, learning management systems and services, and teaching tools.

Figure 1: Australian EdTech sector focus



103 responses out of a total 150 respondents running an EdTech company

EduGrowth: Australian EdTech Market Census 2020

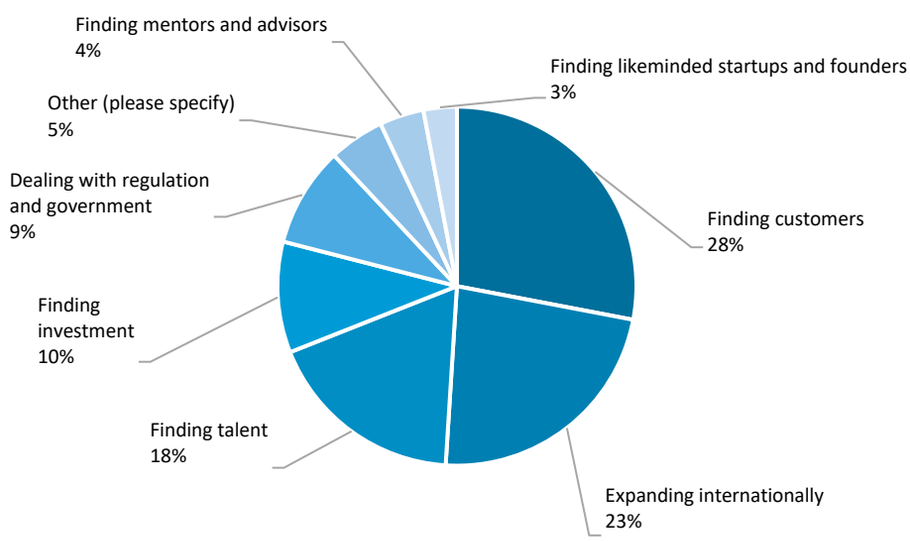
The maturity of the EdTech sector

EdTech Census 2020 demonstrates that Australia's EdTech organisations are growing and progressing. They are reaching more learners per month (on average) than they were previously; more have progressed from the 'start-up' to 'scale-up' phase, whereby their product is proven and revenue is sustainable; and the proportion with revenue in excess of $500,000 per month has increased from 20 percent to 29 percent since the 2019 Australian EdTech Census.

Challenges and future focus

Although the Australian EdTech sector is maturing, finding customers is a challenge for many EdTech organisations (see Figure 2), and growth and expansion remain key priorities. Importantly, almost half (44 percent) of respondents are looking to hire five or more people over the next 12 months – reflecting year-on-year growth across this update and previous EdTech Censuses.

Figure 2: Biggest challenge faced by EdTech companies



164 responses out of a total of 150 respondents running an EdTech company or who have an idea for an EdTech start up
EduGrowth: Australian EdTech Market Census 2020

3 Impact of COVID-19

COVID-19 has accelerated EdTech adoption

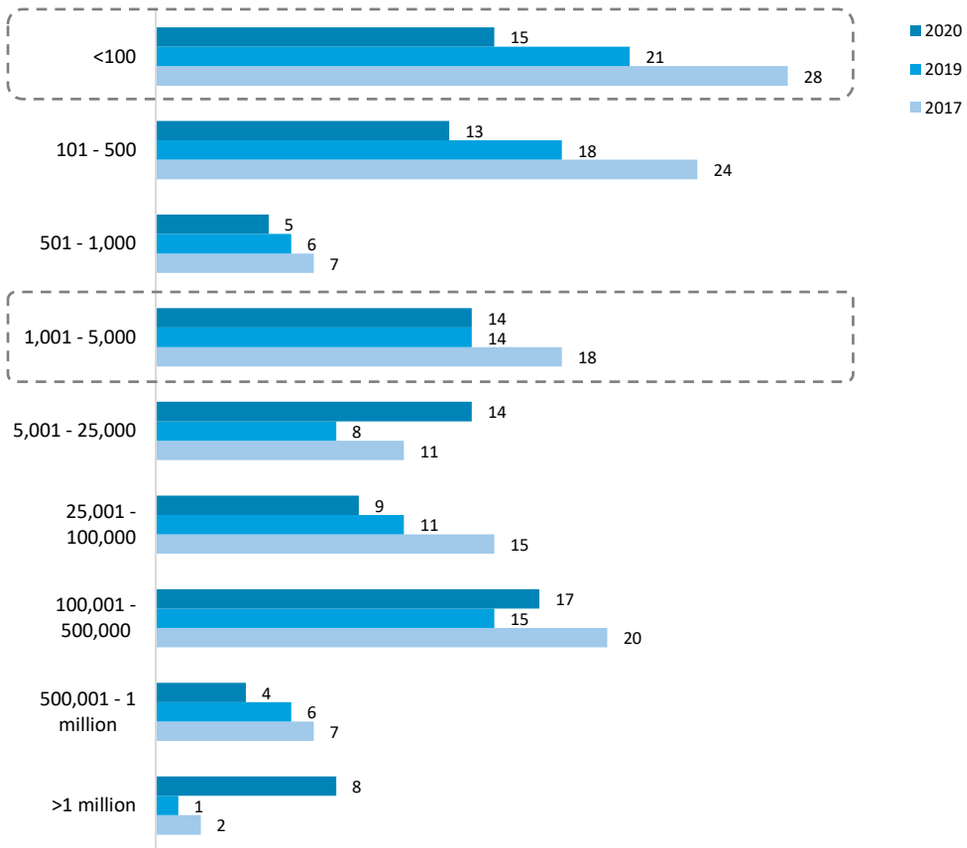
2020 was, of course, a year unlike any other. Globally, EdTech investment and use is accelerating as parents, institutions, enterprises and governments look for new ways to connect, engage and support literally billions of isolated learners from early childhood to adults. COVID-19's disruption, campus closures, and the shift to remote learning has raised the importance and appreciation of EdTech to an unprecedented scale and scope.

EdTech usage has increased and is driven by remote learning

As shown by Figure 3, a higher percentage of Australian EdTech organisations have built learner bases of more than 100,000 learners per month against the backdrop of COVID-19; up from 22 percent in 2019 to 29 percent in 2020. At the upper end of the scale, 8 percent now have a monthly learner base that exceeds 1 million, compared to just 1 percent of EdTech Census respondents in 2019. This reflects feedback from the EdTech organisations engaged to develop this update.

This was of course, to be expected. Without technology, teaching and learning would not have taken place in any meaningful way. When the results of the EdTech Census 2020 and 2019 are compared, online learning and assessment services, together with hybrid learning models and personalised support services, have seen the biggest increase in growth and demand in terms of EdTech solutions.

Figure 3: Learners per month



2020 – 106 responses out of a total 150 respondents running an EdTech company
2019 – 72 responses out of a total 116 respondents running an EdTech company
2017 – 96 responses out of a total 127 respondents running an EdTech company
EduGrowth: Australian EdTech Market Census 2020; 2019; 2017

The response has been impressive, but significant challenges remain

However, the picture is not entirely positive. The revenues of governments and education providers have fallen while their costs have increased, and COVID-19 has taken a great toll on the global and local economies.

For EdTech organisations, this has meant that despite growth in the learners using their solutions and platforms – for many (43 percent of respondents) it has been harder to attract new customers. Increased usage has also not always translated into increased revenues, while it consistently results in additional cost.

Anecdotally, EdTech organisations have talked about the extraordinary challenges they have faced during this time, with education providers battening down the hatches and deferring investment decisions until they have greater capacity for 'discretionary' spend. Very few EdTech organisations, including those focused on remote learning (who have fared best in 2020), have been immune to the challenges of COVID-19.

COVID-19 has contributed to the emergence of a 'two speed' EdTech industry

While the impacts of the pandemic have been broad, they have differed based on the size and scale of the EdTech organisation, with emerging start-ups arguably impacted the most.

During 2020, smaller EdTech organisations found it harder to attract new customers, were less likely to be hiring in the next six months, and were more reliant on grants when compared with both their larger and more established peers, and with the findings of the EdTech Census 2019. The impacts of these challenges are likely to affect emerging organisations, and thus the sector as a whole, for a number of years.

For larger and more established EdTech organisations (that is, those who have reached the scale-up phase), the most pressing COVID-19 challenges are operational in nature. In particular, the need for operational efficiency to manage the cost increases associated with growth and to withstand the cash-flow impacts of delayed customer payments. The pandemic has also made it harder for larger EdTech organisations to expand overseas, which is a key enabler of their continued growth and success.

Janison under the spotlight

David Caspari, Chief Executive Officer

Background

Founded in 1998, Janison seeks to transform the way people learn through providing digital assessment and online exams for K-12 schools, higher education, professional certification bodies, and governments around the world. Before delivering world-firsts in large-scale digital assessments, the company innovated cloud-based learning and professional-development solutions in the earliest days of the World Wide Web.

Key statistic

Ten million tests conducted in the past five years

Key success stories and tipping points

While Janison initially earned its global reputation for creating learning management systems (LMS), the company's move into delivering robust digital assessment platforms at national scale hit a tipping point when the Australian Government engaged Janison to digitise the National Assessment Program – Literacy and Numeracy (NAPLAN). The NAPLAN Online project allowed Janison to achieve a world-first in delivering testing at scale in May 2018, reaching 200,000 students across 1,400 schools. Notable recent projects include working with the OECD to deliver the Program for International Student Assessment (PISA) for Schools test in more than ten countries, remote-proctored language testing for the British Council, a key strategic partnership with D2L Brightspace and, more recently amid COVID-19, enabling assessments to continue for more than 1 million students who were prevented from physically attending exams at their school or university.

Key challenges

More recently, Janison has begun to shift from offering completely bespoke, customised assessment platforms to a standardised but highly configurable solution. There were some challenges in preparing the market to take the leap of faith to embrace this change. Janison pushed the benefits of this standardised but configurable approach, which allows for higher quality, streamlined costs, and more frequent updates; a key enabler to scaling up quickly.

Impact of COVID-19

The Janison team were particularly well equipped to respond to the impacts of COVID-19 for education providers. The team noted observed that, if you were to ask universities at the start of the year whether they were going to review their assessment methods, fewer than 20 percent would suggest they were interested. As a result of COVID-19, Janison believes this number to now be more than 80 percent and, as a result, the company has received significantly more interest via inbound enquiries.

Funding

Janison has been listed on the Australian Stock Exchange since 2017. It had a successful $10 million capital raising to fund global growth initiatives. Further capital raising has allowed Janison to increase spend on sales and marketing, and accelerate the roadmap for the assessment platform to provide more features that the market is demanding, linked to the impact of COVID-19.

Looking to the future

Janison has seen significant growth from the acceleration of market opportunities through COVID-19. It continues to support professional accreditation bodies, schools and higher education providers to digitise their assessments; scaling globally through partnerships; expanding its work for the OECD; and acquiring the UNSW Global Assessments business including the ICAS and REACH assessments. In the past five years, Janison has delivered nearly 10 million tests, a number it expects to replicate this year alone, through customers such as the University of London which is holding its end of semester exams through Janison. Janison believes this is only the start of the digital transformation for assessments and expects to see an increase in demand and customers in the future.

Key learnings

The team at Janison highlight the need for EdTech organisations to be courageous. The EdTech market has traditionally flown under the radar and education has always been a conservative sector. However, the past few months have seen a significant transition to new ways of working. Those who are prepared to enter the market now - rather than wait - will reap the benefits.

Teach Starter under the spotlight

Jill Snape and Scott Tonges, Cofounders and Directors

Background

Scott Tonges and Jill Snape founded Teach Starter in 2012. The pair have a background in web design and teaching, respectively, and initially focused on designing educational content for teachers. They soon gained traction through word of mouth and have continued with a steady growth in operations. Teach Starter now provides a range of products targeted at teachers, schools, home educators and parents. Its online materials, accessed through a subscription model, form the basis of its value proposition.

Key statistics

900,000 users ranging from teachers to parents

95 percent of market comes directly from teachers

Key success stories and tipping points

Teach Starter initially maintained a simple approach to marketing by building its brand name through Facebook and Search Engine Optimisation (SEO). Mr Tonges and Ms Snape were able to see significant return on investment with this approach in 2014 as the market was still in its introductory stages and few competitors were advertising through Facebook.

The pair's success with Facebook and Search Engine Optimisation (SEO) marketing has contributed to a range of advantages such as word of mouth promotion and advocacy from teachers. They estimate that approximately 25,000 out of a total of 36,000 teachers use Teach Starter in Queensland. Teach Starter has experienced a surge in users since the COVID-19 outbreak, with over 250,000 free Home Learning Packs being downloaded since March 2020.

Key challenges

The key challenge highlighted by Teach Starter is its ability to sustainably create high-quality teaching resources at scale for multiple geographic markets, while more digital teaching resources become commoditised through marketplaces and lower-cost competitors.

Impact of COVID-19

There was a large push by Teach Starter to promote its products in the early stages of COVID-19, with hopes to drive meaningful growth. While the company has seen significant increases in new customers, this rise has not translated to revenue growth. Teach Starter did observe a significant increase in sign-ups and interest from parents, although this customer segment is not its primary focus.

Funding

Teach Starter launched lean and without the help of external capital. Relying on their own funds, Mr Tonges and Ms Snape were able to achieve a profitable first month. All products and services owned and operated by Teach Starter have been funded through reinvested revenue, with this revenue generated through organic growth.

Looking to the future

Teach Starter's vision is to provide quality curriculum-aligned resources. Its content ranges from activities, worksheets and presentations to games and posters. It has previously concentrated on localising content in Australia, and does the same for its customers based in Texas as its platform sees the largest existing base of users come from the United States. The company will target one specific state to initially build capabilities that can then be scaled across regions, and aligned to the needs of a diverse set of users.

Key learnings

Teach Starter has a special focus on customer centricity – the company prides itself on listening to its customers at every step of the product development process, including by testing concepts and prototypes with teachers.

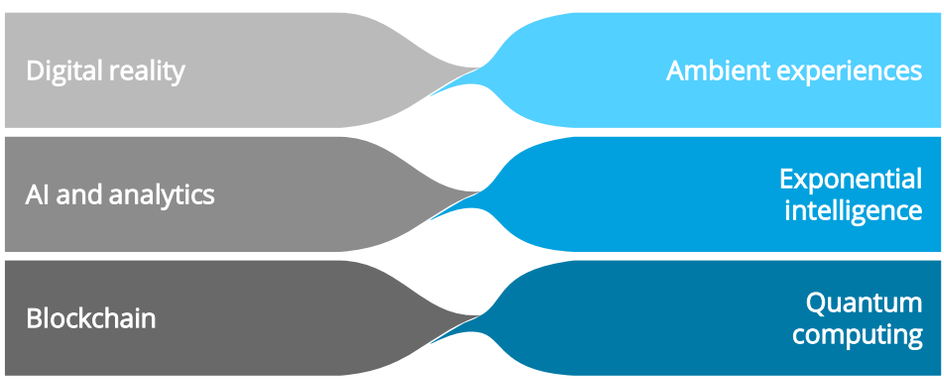
Teach Starter believes in building a community amongst customers to encourage teacher advocacy. The founders emphasised the need to maintain a small feedback loop with customers. In its first year, Teach Starter launched a feature where teachers could easily request a resource they needed. This has given Teach Starter's operations an edge, as it is able to collect data and provide support, while at the same time using customer feedback to prioritise its product and service backlog.

4 Cutting-edge technology in the spotlight

Now and into the future

In this year's EdTech Census update, we revisit some technology trends highlighted in previous reports and track their progression. We also touch on the next wave of technology that we can expect to see from the EdTech sector.

Figure 4: Technology trends in EdTech

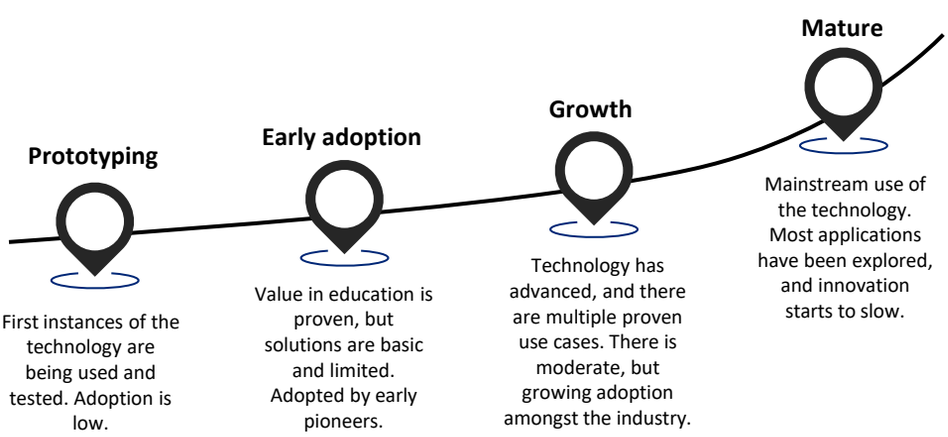


Maturity rating

Much of the technology we have highlighted now and in previous editions, has seen ever increasing adoption among EdTech organisations.

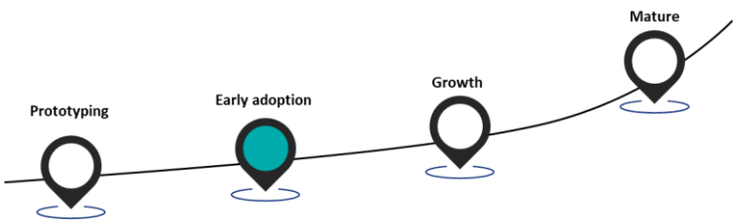
For the trends that we will revisit, a guideline rating has been applied to give clue into the prevalence of the technology in the industry today.

Figure 5: Maturity rating



Rising technology in today's market

Digital reality



Definition: Digital reality refers to a host of technologies including AR/VR, mixed reality, voice interfaces, and other immersive and spatial technologies. All of these seek to produce a more natural, human-centric user experience through engaging the body's five senses. Quite often this involves a combination of Internet of Things (IoT) and digital reality technologies, whereby data feeds from IoT connected devices supplement the immersion experience.

Example use cases:

- Experiential learning through digital means
- Bridging distance learning
- Virtual excursions
- Simulating otherwise hazardous training
- Revamping classrooms with AR
- Combination with AI and analytics to personalise teaching.

Maturity rating: Early adoption.
13 percent of respondents to the EdTech Census 2020 survey highlighted the use of digital reality technologies, and 23 percent quote utilisation of IoT. Evidently, there is room for growth in this space, but as accessibility to digital reality increases we expect continued scaling in the future.

Examples in the market:
FLAIM Systems[12]
FLAIM systems provides a VR solution that trains firefighters. The solution has been developed on the basis of research and development at Deakin University's Institute for Intelligent Systems Research and Innovation. The user is immersed in a range of hazardous and emergency situations that mimic real fire behaviour including at a gas station, a tunnel, and an airport, complete with the fire, smoke, water and fire-extinguishing foam. The immersive technology prepares firefighters for real world training and operational challenges, in a safe virtual environment.

Immersive Technologies[13]
Immersive Technologies, the world's largest supplier of mining equipment simulators, has developed its WorksiteVR Quest program as a compact alternative to its traditional simulator machines. Through the 3D computer-generated environment, users can experience and engage with virtual machinery for their training, employing the use of a headset and motion controllers. Doing so provides a tool that has the potential to reduce hiring costs, improve safety awareness and build confidence, all from the safety of the office.

Stanford School of Medicine[14]
Stanford's Neurological Simulation and Virtual Reality Center was an early adopter of the technology, first opening in 2016. The centre uses scans from MRI and CT scan machines to form 3D images of patient anatomies, which medical professionals can then virtually explore with VR headsets, removing some need for physical examination. Since opening, 1,100 neurosurgical patients have used the VR program at some point in their care.

What else is there to know: Hardware makers such as Samsung, Oculus and Valve are constantly innovating in this space. Advancements made now will become standard in the coming years as technology trickles down to the mainstream and becomes more accessible. For example, the latest ultra high-res OLED displays being created now, will likely be the norm three to five years down the line[15].

Oppida under the spotlight

Bianca Raby, Founder and Chief Executive Officer

Background
Oppida is a digital education agency that designs and develops bespoke, student-centred, digital educational products for organisations who want to raise the bar on the quality of their online offerings. Borne out of a desire to refocus teaching on quality rather than profitability, Oppida takes a stand for the learning designer and exists to show a future of possibilities through exceptionally designed digital education experiences.

Key statistics

4 full time employees

Projected 160 percent growth rate in year 2

Key success stories and tipping points

After two years of operation, Oppida has focused on delivering a learner-centred design approach to its client projects.

The Oppida team highlight its partnership with the Australian and New Zealand School of Government (ANZSOG) as an important development in realising Oppida's mission. Oppida provided valuable support as ANZSOG transitioned to online learning.

Key challenges

Oppida noted challenges in convincing some education providers of the need to transform digital offerings – specifically to move beyond 'copy-paste' content and towards purpose-driven courses that fundamentally incorporate digital design.

Speaking with Oppida's founder, Bianca Raby, the organisation has faced challenges as decision makers can sometimes be unaware of the possibilities enabled through digital learning, and what it takes to ensure quality.

Impact of COVID-19

Like many EdTech organisations, Oppida saw COVID-19 hasten the digital transformation plans of education providers, as gaps in existing online content were exposed. The prioritisation of digital transformation is a welcome change, but Ms Raby also sees some providers seeking low-cost, quick-fix solutions to bide time until budgets are reset in early 2021. As a result, she expects continued demand for EdTech solutions well beyond 2021.

Funding

Oppida has been a profitable operation since inception. This is in part due to the efficiency in cost management that Oppida enjoys, with few fixed costs and a small, efficient team. It also helps that Ms Raby identifies as a learning designer and project manager, and spent the first year delivering the work with the team. While current operations may closely represent a consultancy model, Oppida envisions to one day partner, and therefore power, the development of educational products for a stake in the future.

Looking to the future

Moving forward, Oppida seeks to expand its presence across the Asia Pacific region. In preparing to do so, Oppida established a partnership with Canvas which proved to be hugely beneficial: enabling Oppida to build international linkages and reach. Oppida has also invested in its own video content production studio to enhance the quality of its solutions and marketing capabilities. Eventually, Oppida seeks to develop a suite of marquee products, as part of which it aims to commercialise its IP into set courses; a process that is held back currently by the absence of a trusted partner.

Key learnings

Ms Raby's advice to other EdTech organisations is to be authentic, humble and "know why you are doing what you do". She believes it really helps if EdTechs are in this for something bigger than personal gain, as the reward for doing so is authenticity that will always reflect positively with education providers. Additionally, Oppida emphasises that EdTechs should be here to help make the large-scale improvements the sector needs, and aim to simplify jargon for outsiders. That is, to not hide behind buzzwords, but to clearly communicate without patronising educators. Ms Raby puts it simply, "serve first, sell later and the money-side will eventually work itself out".

Education Perfect under the spotlight

Alex Burke, Chief Executive Officer

Background

Education Perfect (EP) was built off the back of sitting in classrooms to understand the ways secondary school teachers teach and their students learn. EP offers a digital teaching and learning toolkit that seeks to address the needs of teachers, school leaders, students and parents. Students are the focal point, with school leaders, teachers and parents provided with tools and information to support their improved learning outcomes.

Key Stats

1 million+ active users

2000 + schools in Australia (CAGR of 50 percent over past 3 years)

500+ schools in NZ (CAGR of 50 percent over past 3 years)

NPS score of 67 in Australia

Key success stories and tipping points

EP has had a number of success stories but a key tipping point was when it started employing teachers to provide more specific feedback on products and development. This was a critical moment that enabled it to bridge the gap between what EP was observing and how this translated into changes on the platform and within the content. It was when EP started consistently receiving very positive feedback from both teachers and students that the company knew it was starting to achieve the right product and market fit. But, as highlighted in EP's key learnings, it continued to improve and optimise based on user feedback. Doing so ultimately helped with EP's credibility when selling its product to schools.

Key challenges

As a comprehensive digital teaching and learning toolkit with a broad content library, EP found that explaining the product, communicating its value and encouraging teachers to use it to its full potential can be challenging. To respond to this, EP invested in great in-platform user support (average response time is seven minutes) as well as professional development for teachers. This reflects the move from in-person to remote professional development.

Impact of COVID-19

EP has seen an increase in its profile during COVID-19. The organisation views now as a time of change and an opportunity to challenge thinking in education. However, like many other EdTech organisations have experienced and observed, the shift to digital delivery has highlighted issues in equitable access to technology. EP endeavours to alleviate this issue through its 'EP for All' initiative, which introduces pricing subsidies across schools and students that are disadvantaged.

Funding

EP has received trade grants from the New Zealand Government related to exports and technology research and development, and participated in government procurements.

EP has been a profitable business that has reinvested income to drive growth initiatives. In part, this is due to EP's pricing, which reflects the value proposition of its products. CEO, Alex Burke, noted that some in the industry believe it to be a race to the bottom pricewise, something which he views as unsustainable and a detractor to the EdTech industry as a whole.

Looking to the future

In the future, EP is looking to deepen its presence in Australia and New Zealand, with an eye to further expand internationally. EP is hoping to draw in more primary schools domestically to shift customers onto its suite of products to maximise the benefits that EP can bring. Internationally, EP is targeting expansion into 100 countries (from 58 today) across international and charter schools. To do so, the company envisions a global product that is aligned to standards such as the International General Certificate of Secondary Education and the International Baccalaureate® (IB) Middle Years Programme, providing a closer product fit for international customers.

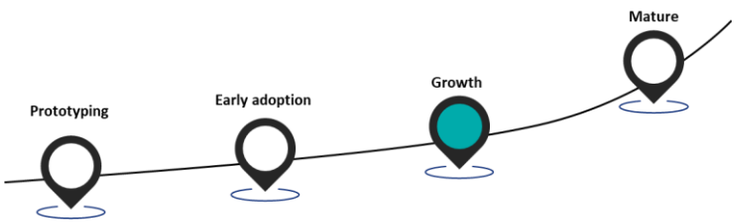
Key learnings

EP's advice reflects its experience as a larger, more mature EdTech provider. A critical point raised was to be user first and to obsess over the user experience. As Mr Burke states: "If you're continually staying connected to your users, listening, validating solutions and seeking ongoing feedback, you can never stray too far wrong". This mantra has been the bedrock of EP's growth.

EP also attributes its growth to its mindset of continuous improvement. Product development and operational excellence sit on the spectrum of completeness, where there is always room to improve and innovate. Finally, building a culture of excellence is critical. Team members must feel like they are supported and valued in their work, and from a user point of view, the solution simply has to work.

Rising technology in today's market

Artificial intelligence and analytics



Definition: Artificial intelligence (AI) or cognitive technologies attempt to replicate the cognitive and critical thinking of the human mind through technology. Also included in this domain is the analysis and pattern recognition of learning analytics and other examples including machine learning, neural networks, robotic process automation, bots, natural language processing, and neural nets.

AI and analytics enables providers to add another layer to the user experience through on-the-fly adaptation to user input such as voice or content preferences.

Example use cases:

- Personalised teaching based on insights drawn from learning data and synergies with digital reality technology
- Automation of administrative tasks
- Predictive analytics for student progression
- Improved efficiencies in research
- Globally standardised curriculums through smart translations.

Maturity rating: Growth.
48 percent of respondents to this survey highlighted the use of AI. Learning analytics in particular is quickly becoming a staple for any educational institution, as its value gets proven time and time again and as ease of access improves. Use of advanced AI lags behind this but, as more use cases are proven in the market, the market can expect to see growth in adoption.

Examples in the market:

Gheorg[16]
Aimed towards empowering children to develop mental resilience, emotional awareness and social literacy, Gheorg uses AI through a mobile app to advance diagnosis and treatment of childhood anxiety. The app is founded on psychological science, and tracks and adapts to the behaviour of children to tailor exercises and activities that are best suited to improve their mental wellbeing.

KidSense.AI[17]
KidSense.AI harnesses automatic speech recognition for educational speech assessments. Algorithms are trained from over five years of data which allows KidSense.AI to improve recognition, even when two languages are spoken at the same time. The program is also able to evaluate pronunciation in real time with accuracy unmatched by competing non-AI solutions.

Microsoft[18]
The Microsoft AI for Good Challenge is an example of how AI development can be influenced by students themselves. In the latest 2020 challenge, Australian students from Years 7-12 were asked to dream up creative uses where AI could be used to do good in the world. Teachers gain professional development through training modules, and students benefit from learning about AI and its concepts.

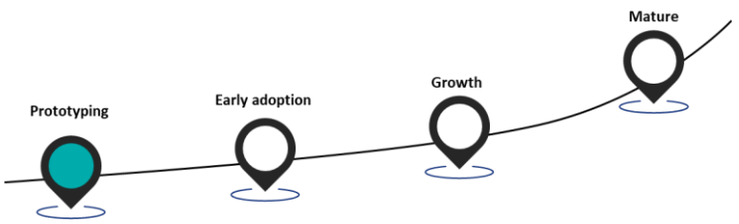
What else is there to know:
The Digital Technologies Hub has a number of resources on AI, including a roadmap and research articles[19].

An important note is the continuing debate around the ethics behind the use of AI and data security. The Department of Industry, Science, Energy and Resources has published an AI Ethics Framework that will evolve as AI is further implemented into the economy[20].

More recently, the Australian Government made a $20m investment in a new national artificial intelligence and machine learning centre, based in the University of Adelaide[21]. The outputs to come will surely influence how EdTechs can innovate in the future.

Rising technology in today's market

Blockchain



Definition: Highlighted in the EdTech Census 2019, blockchain is an evolving technology that enables trust in the distribution of information by holding a shared, immutable record of transactions within a secure and permanent network of ledgers. Like the name suggests, data is transferred in 'blocks' which hold the content of a user's request and identification data for the block and adjacent blocks to form an immutable database known as a 'chain'. The financial services sector tends to lead development in blockchain technology, but notably there is an increase of investment by governments, and in health and education[22].

Example use cases:

- Trusted accreditation
- Secure and immutable storage of student records
- Next-gen payment and reward methods using cryptocurrencies
- Smart contracts to better link peer-to-peer learning.

Maturity rating: Prototype.
Just 5 percent of respondents in this survey highlighted the use of blockchain technology, implying the very early days of its adoption in EdTech. This is unsurprising given a lack of easy access to the technology and uncertainty over value for education providers, which is especially relevant in the current environment.

Examples in the market:

Aversafe [23]
Aversafe seeks to combat credential fraud by using blockchain technology to provide decentralised credential insurance and verification services to employers and educational providers. The solution is designed to provide confidence behind advertised credentials, as the use of a distributed ledger is permanent and tamperproof. Through doing so, users are able to reduce costs related to background checks and streamline applicant reviews.

QualiChain [24]
The QualiChain project is similarly designed to create, pilot and evaluate a prototype of a decentralised platform for storing, sharing and verifying education and employment qualifications. The proposed solution explores four scenarios: lifelong learning, smart curriculum design, staffing the public sector, and providing HR consultancy and competency management services. The most recent pilot is being run at the National Technical University of Athens where a smart badge student accreditation is being run through a secure blockchain ledger.

ODEM[25]
ODEM is a swiss-based decentralised marketplace that uses blockchain to connect individual teachers and students through smart contracts. Every course a student completes, and similarly every program an educator has taught, is logged into the ODEM ledger, which forms part of a user's credentials. The smart contracts are powered by their own ODEM token, which uses a blockchain-enabled payment method to produce instant and secure payments for services.

What else is there to know: Continued investment is spurring improvements in the speed and scalability of blockchain technology. This is in part due to improvements in efficiency, such as with Data61 and the University of Sydney's Australian Red Belly Blockchain (a new variety of blockchain developed by Data61 and the University of Sydney, and supported by CSIRO and the Australian Research Council), but also growth in pure computation power which will continue well into the future[26].

Australia is approaching blockchain in accordance to the National Blockchain Roadmap, which outlines the current and potential wider market as well as regulatory implications that will be in play[27].

Cluey Learning under the spotlight

Mark Rohald, Cofounder and Chief Executive Officer

Background

Cluey Learning is a platform offering personalised, face-to-face online tutoring for students in Years 2-12 across Maths, English and Chemistry. It was co-founded by Mark Rohald who has a background in education and was previously involved in founding the Think Education Group and Open Colleges. It was founded to transform school-based learning by putting the student at the centre of the academic experience. Services offered include learning plans, live practice, and revisions and learning insights.

Key Stats

90+ full-time staff

250,000+ learning sessions

9,000+ customers

Key success stories and tipping points

Cluey Learning's success can be traced back to its roots. It was founded by a team of six executives to try and disrupt school-based learning. It was critical to have a highly capable team from the start to be able to solve complex challenges early. Mr Rohald believes having a team with educational expertise (for learning and design), customer acquisition skills (especially with a B2C business model) and experience in scalability (to operationalise effectively) has been critical to the success and growth of the organisation.

Over the last year, the company has seen two-step growth with additional demand from COVID-19. Cluey Learning has achieved more than just growth in its customer base – it has also been able to focus on equitable access to learning support to those who may not be able to afford it. The company is working with partners to offer its services to disadvantaged students and has also set up the Cluey Learning Foundation; a not-for-profit arm of the company, that aims to subsidise service costs to students who need it the most.

Impact of COVID-19

While the company was already experiencing growth, the pandemic has accelerated that demand by approximately 10-15 percent as students increasingly seek support online. Beyond customer growth, Mr Rohald also believes the pandemic has led to a change in attitude towards digital education within the last few months, which was otherwise not expected for some time.

Funding

The founders used their own capital to start the company in 2017, putting in $11 million of investment to build the platform and core modules that were mapped to the entire Australian syllabus for those subjects. They felt this upfront investment was critical to start on the right foot and build a solid foundation before going live, which they did in 2018.

Since then, Cluey Learning has had two major funding rounds, one in 2019 to optimise operations, and another in 2020 due to the rapid growth and uptake from students. In December 2020, Cluey Learning was listed on the ASX.

Looking to the future

Mr Rohald believes there is still a lot of growth potential for Cluey Learning. He believes the Australian market has approximately 1.6 million students who are already actively using or considering tutoring, with another approximately two million students using or considering using some other type of outside-classroom learning support. The company's goal is to expand its user base and offer more learning support options and subjects.

The company operates across the full range of the customer lifecycle and offers a range of learning support based on collected data. Having built platforms that are easily adaptable (multilingual and multicurrency), the company hopes that it will be relatively easy to expand to other English speaking countries.

Key learnings

Mr Rohald believes that hiring the best team early on is essential – highlighting the importance of intellectual capital in EdTech. He also highlights focusing on customers, relying on data and building for scale as essential when starting out. Finally, he recommends solving challenges manually (at low cost) before automating to really understand the core issue and to be prepared for a challenging, yet rewarding journey.

Studiosity under the spotlight

Jack Goodman, Founder and Executive Chair

Background
Studiosity was founded in 2003 with the vision of making one-to-one learning support accessible and affordable. Founder Jack Goodman made the decision to partner with large-scale institutions in the education sector – universities, governments, public libraries and schools – to ensure equity of access and scaled social change. The service connects students to subject-matter specialists on-demand, for interactions based on formative feedback, scaffolding, and stringent academic integrity policy and transparency.

Key statistics

273 educational partners

1.67 million students

38 full time staff

2 offices (Sydney, AU; Richmond, UK)

Key success stories

A number of factors have contributed to the success and growth of Studiosity. Internally, the team focused on building the platform's capability in the early years to provide the best possible digital experience for students, as well as their team of online subject specialists. External factors including student-centric strategies and competitive, high-quality student experiences, widening higher education participation, and an increasing number of international students have led universities to strengthen their study and support offerings – driving demand for services such as 24/7 study help and personalised, formative writing feedback.

While the platform has experienced success with education providers, Studiosity also focuses on building relationships with not-for-profit organisations focussed on providing more equitable access to learning support.

Key challenges

The biggest initial challenge for Studiosity was establishing a new category of service in the Australian market, while targeting a highly evidence-driven sector. In response, the team took two main approaches. Firstly, appointing an Academic Advisory Board and a Chief Academic Officer. Secondly, encouraging independent research into its services and developing a formal, public research strategy into online learning efficacy.

Every research study has shown a positive correlation – and in some cases, proven causation – between the use of Studiosity and one or more key measures of student success.

Impact of COVID-19

Due to established partnerships with higher education providers, Studiosity has been well positioned to serve the sector during the COVID-19 pandemic. Student engagement with Studiosity's academic literacy platform has grown 50 percent year on year. This has been driven by increasing student engagement and student support requirements of current partners, who account for 70 percent of the Australian university market.

Funding

Due to limited venture capital funding available for EdTech in Australia during the early 2000s, Studiosity was bootstrapped by its founder. As the organisation expanded its user base and team, a select group of Australian investors provided additional capital in 2013. Until 2021, no other external funding had been raised by Studiosity, providing the flexibility to manage a longer sales cycle.

In February 2021, Studiosity announced it was welcoming two new investor groups onto its share register, following continued strong demand for its platform by universities both domestically and internationally. The new investors are CVC Emerging Companies Fund and Online Education Services (OES), part of the SEEK group (ASX:SEK). CVC and OES join Studiosity as minority investors, with the company's plans for product development and international growth remaining unchanged. "For several years Studiosity has proven to be an exceptional educational and technology service provider," said Denice Pitt, CEO of OES. "With our investment in the company, we expect to discover many synergies as we collaborate to deliver new services for universities and their students, across all the geographies in which OES operates."

"From our first meeting we were impressed with Studiosity's mission, solutions, market share, and leadership team," said Christian Jensen, Portfolio Manager at CVC Emerging Companies Fund. "We look forward to working with the team to help the company reach its future milestones."

Looking to the future

Studiosity's mission is to increase life chances through personalised learning support. This mission is still the driver of its commercial model which seeks to deliver wide-scale social change equitably, through B2B partnerships with higher education providers and without limiting a student's access due to their financial capacity. The team has expanded to international markets including New Zealand, the United Kingdom, Ireland, and soon Canada.

In 2018, the team launched the world's first digital peer-to-peer service staffed by a university's own students and for their own students, with take-up in Australia, New Zealand and the UK since. In February 2020, Studiosity announced a five-year, $1 million investment and partnership with CSIRO's Data61 to amplify human support with new AI functionality.

Key learnings

Studiosity's success is grounded in customer experience principles, including the wellbeing of its online team and students. The team believes strongly in hiring the best talent (online specialists) without compromising quality of life or quality of service. The organisation believes this is in line with the uncompromising standards universities have for upholding the quality of their own student experience.

Evolution of technology in the future

Ambient experiences

In the future, technology will become seamlessly integrated into society, and interactions with devices and programming will be a natural habit.

Progressing from digital reality technologies, ambient experiences refers to the technologies that will allow this more natural and seamless experience. Devices will get smaller, more capable and more interconnected, which will further its embedding in everyday life.

For EdTechs, this means the potential for even deeper experiential learning, reduced administrative burden or ever-present assistants. Imagine a student saying, “I want to book the meeting room” to a voice assistant, which triggers an automated booking, organises the room’s computer systems to match the student’s login and locks the doors until the student approaches the room [28].

Exponential intelligences

A missing link in AI and analytics technology so far has been the understanding and reciprocation of emotion and the finer nuances of the human mind. Exponential and emotional intelligences are envisioned to crack this code, expanding capability and further bringing technology to life.

This opens up many doors for EdTechs which are constrained by today’s analytical ability. In the future, technology could tailor feedback to balance student temperament with academic disposition. Virtual teaching assistants could have personality and similarly adjust interactions based on student mood [29].

Quantum computing

The next era of computing power is expected to be quantum which utilises the quantum state of subatomic particles to perform operations through complex mathematics. The effect will be a significant increase in the ability to process and analyse information.

For the education sector and beyond, the possible applications are still under debate. The increase in computation power will certainly aid aspects of higher education research, while resulting improvements in machine learning are likely to form the core of EdTech solutions that seek to personalise learning.

The concept of quantum computing has been around since the 1980s, but its practical creation has only surfaced recently. In October 2019, Google created the first technology to achieve ‘quantum supremacy’, as it has the ability to perform operations impossible for traditional computing methods. In a paper on the milestone, the researchers said, “we are only one creative algorithm away from valuable near-term applications” [30].

5 Where to next?

Building on the COVID-19 opportunity

Investment in EdTech has been heavily concentrated in the US and China. Given the global nature of the EdTech sector, Australian EdTech firms have been competing with overseas peers who have greater access to funding and capital. This has created a more challenging environment for smaller and start-up EdTechs; the same segment of the sector that has been most significantly impacted by COVID-19.

Despite the challenges it has raised, COVID-19 has not only driven demand for EdTech solutions, and further underlined the promise and potential of education innovations EdTech can enable. Nowhere is this more apparent than in digital and blended learning, with the pandemic accelerating the need for technologies that enable personalised learning outside the classroom or lecture theatre.

Embedding innovation in the education core

While digital and blended learning is here to stay, it is critical that the role of EdTech is not diminished as this becomes 'the new normal'.

EdTech partnerships need to be conceived of as a mechanism for continuously improving the delivery of high-quality blended and digital learning at scale, not a means to experiment with 'bleeding-edge' innovation slow to reach mainstream education delivery practice. EdTech needs to therefore be understood as an integral part of the education ecosystem, with its innovation driven by real world education challenges and solutions.

In learning and teaching, this requires EdTech organisations and education providers to increasingly integrate their efforts; applying common learning frameworks, pedagogical approaches, and mechanisms for learning delivery and design. This is best realised through true partnerships that can scale, reduce development effort and risk, and drive robust review and evaluation processes to continuously improve EdTech solutions in line with the needs of students, providers and policy makers.

Recognising the social potential of EdTech

If digital and blended learning offer the greatest opportunity for the EdTech sector and education systems to be better aligned, they are closely followed by the potential that EdTech has to improve equity in education. As a number of the case studies in this report highlight, many EdTechs are focusing not just on growth and customer numbers but also on ways to improve the equity of learning outcomes through technology.

As it is often technology itself that creates barriers to equitable education – whether this is due to affordability, accessibility or digital literacy – it is technology, and the EdTechs that develop it, that have the greatest potential to drive equitable access and outcomes in a future of digitally-enabled and digitally-delivered learning.

Where to from here?

At the close of this EdTech Census 2020 update, the call to action is for EdTech to become a true pillar of the education ecosystem; not a category of supplier and not a parallel sector focused only on long-term innovation. Greater integration will deliver better outcomes from EdTech over time for students and systems, facilitate ongoing R&D investments, and help to overcome the barriers to EdTech adoption that exist in the education system today. It will also help to cement and strengthen Australia's position as a global education leader.

If the tangible next steps are to build stronger alignment between EdTech and the broader education sector, and to build on the momentum of blended and digital learning that was created through COVID-19, there are questions that will need to be answered as EdTech scales and grows:

- Where will investment come from? Can the EdTech industry reduce reliance on venture capital and start-up funding to a model of co-investment and joint ventures with providers?
- What does the future EdTech workforce look like, and what are the education technology capabilities and skills that require investment now?
- Where are the international opportunities – whether for the global expansion of Australia's EdTechs, or to encourage sharing across borders between both EdTechs and providers?

Providing solutions to these practical questions will bey critical to the development and embedding of EdTech solutions that improve the student experience and learner outcomes; and maximise the COVID-19 EdTech opportunity.

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