Transforming how the world learns – Innovations in Learning

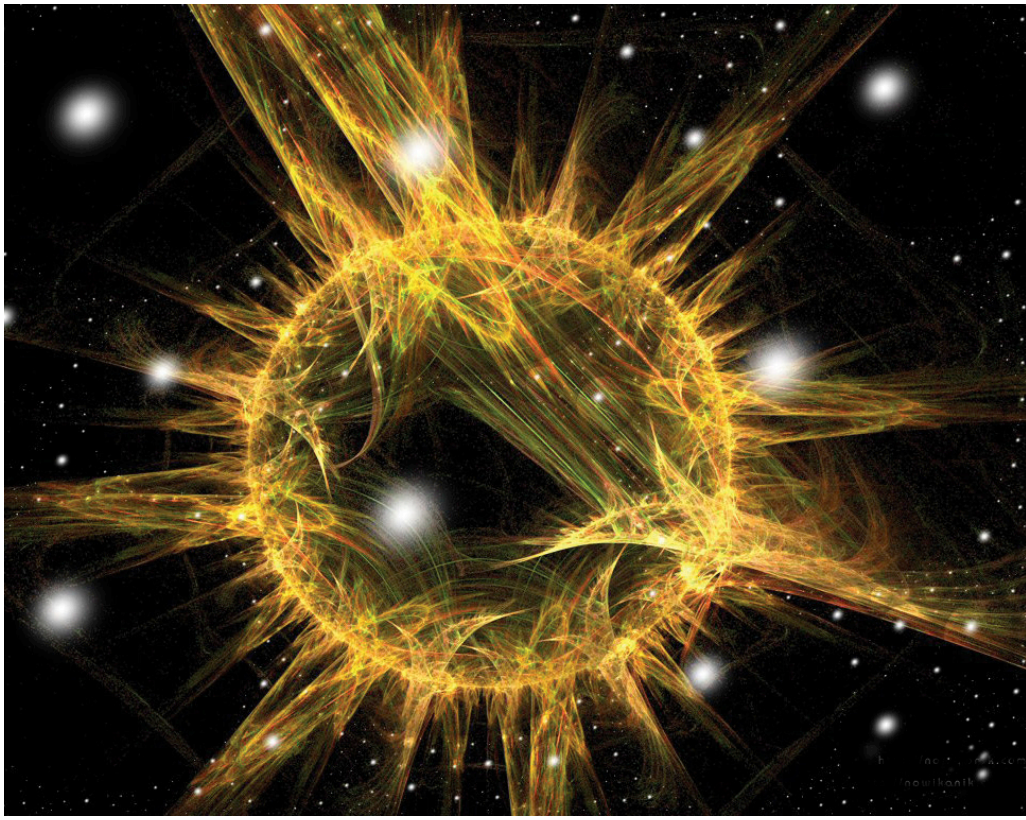
Matthew Burley, Global Mindset

Australia has four of the top 10 education faculties (QS rankings) and exports $16 billion in education services. Compare that with $22 billion for the US – and the picture that emerges is that of a vibrant sector punching well above its weight in global terms.

Indeed, Australia has the scale and ability to use the current wave of digital innovation to create a globally competitive learning technology sector, if we choose.

With this in mind, 30 internationally known speakers from education and industry came together in Sydney to see how innovation could address declining educational outcomes.

They presented compelling examples of digital, leadership, global and lateral thinking as part of Global Mindset's 'Innovations in Learning' conference.



Digital thinking

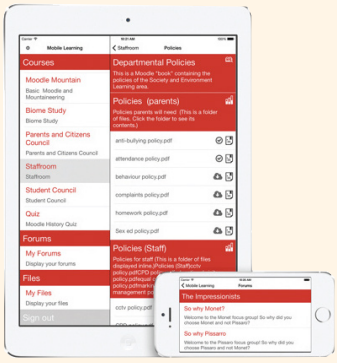
"Kids today are open, they're online, they're exhibiting new patterns of knowledge gathering, consumption and production. Simply put, their brains work differently."

This was the message from keynote, Bradley Lukanic. As the Executive Director of CannonDesign's education practice, his focus

Mobile apps for learning on the move

Mobile Learning helps schools create mobiles apps for iPhone, iPad and Android devices that integrate with the Moodle Learning Management System (LMS). Mobile Learning apps allow students, staff and parents to log in to a school's learning management system, easily navigate and download learning materials, as well as communicate on forums on their mobile devices. With iPhones, iPads and Android devices fast becoming ubiquitous in the K–12 community, schools have the opportunity to improve learning, teaching and communication on mobile devices already in people's pockets.

But most LMS systems do not work well on mobile devices because they were originally designed for large desktop screens



and need a reliable internet connection. In contrast, mobile devices have tiny screens and unreliable internet connections; navigating a LMS on a tiny mobile screen can be frustrating for students, staff and parents. Something as simple as travelling through a train tunnel results in being disconnected.

Mobile Learning apps are specifically designed for small screens and offline environments. Their apps support in-app downloads of PDFs, audio files and other learning materials so that learners can keep learning offline. Internet connections may stop, but learning should always continue.

Moodle is a wonderful LMS and widely used by many K–12 schools; schools now have the opportunity to extend how their LMS can be used for learning and teaching on mobile devices in 2015.

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is on creating learning environments shaped by immersive teaching and learning supported by technology and how the pedagogical shift in learning environments is transforming learning communities and places for instruction.

We also heard that "post-digital thinking means taking an approach to solving problems, designing systems and understanding human behaviour that draws on concepts fundamental to the intersection of computation, design, and human intuition, assuming search, storage and retrieval are ubiquitous and for practical purposes infinite", Prof Phil Long,Executive Director Innovation and Analytics, University of Queensland.

As an illustration of how far neuroscience is progressing, Professor Long showed a video from University California Berkley of the first demonstration that dynamic natural visual experiences can be recovered from very slow brain activity recorded by functional Magnetic Resonance Imaging (fMRI) – begging the question – will Brain to Brain exchanges feature in our future?

Raju Varanassi, COO for Education Services Australia, and previously head of NSW Centre for Learning Innovation, outlined recent progress of digital learning in Australian schools, quoting from Fullan; "with pedagogy in the driver's seat and technology as the accelerator …(we)…have better chance of achieving whole system reform (2011)."

He conceded that although "all sectors of education have long standing assumptions on protocols, processes, space and practices which are about to be disrupted. The impact of technology on digital learning has been somewhat peripheral up to now".

When asked why it took so long for new educational tools to be introduced into schools, Raju cited ethics, privacy concerns and political hurdles.

Leadership thinking

Michael Staton, Partner Learn Capital claims "We are at a tipping point for the ability of technology to create a market restructuring in education".

In less than five years, his firm's investments in 45 rapidly scaling education startups have reached over 80 million learners across every country and every age and income level. Their companies include Edmodo, Class Dojo, General Assembly, Bloom Board, Makers Row, eSpark and Coursera.

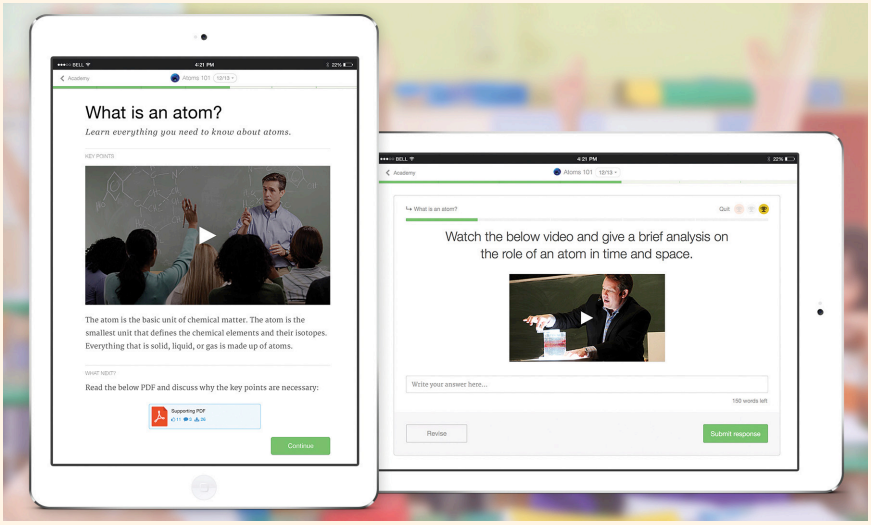
Staton argues that the prevalence of social media, advances in battery capacity, extent of global connected devices and broadband penetration have started a 20–30 year 'deployment' phase that is unstoppable.

He cautions that since this is happening at a time when schools are struggling to engage students and the job market is requiring greater skill levels, there is likely to be ongoing innovation of learning formats. For example 'unbundling' of current valued interactions could mean greater use of online platforms for *Peer Motivation* (NovoEd), Coached Curriculum (Bloc) and Expert Guidance (popexpert). New notions of *Expert Content* could result in a Produced Model (CreativeLIVE), Partner Model (Coursera) or MarketPlace Model (Udemy).

Innovative formats may also result in 'rebundling' learning interactions into Learning Accelerators, Flipped Schools and Distributed Schooling.

Cognizant executive, Arun Subramanyam,

Making your BYOD or 1:1 program count



When it comes to a BYOD program or 1 to 1 rollout, the focus is often placed upon the all important question: Which device should our students use? Chromebooks? iPads? Microsoft, Google or Apple? And while this is an important consideration it's only one half of the equation in any successful rollout.

Consider this: What's the difference between an old typewriter and a laptop in a classroom? Unfortunately in many classrooms not a whole lot, with studies revealing that the most typical use of a device in a classroom is for typing or word processing!

Why does this happen? At the end of the day, a device, be it a laptop or tablet, is only as useful as the software on it. Software is what transforms a device from a typewriter substituting paper to digital worksheets, into an innovative learning tool that can truly redefine a learning experience.

So a successful rollout needs both the hardware and the software – but what software?

Yohan Dantan, Chief Product Architect with Sydney-based myEd has spent the last 18 months partnering with schools across Australia to answer this question.

"What we heard time and time again was that the majority of software was too difficult and complex to use. The learning platforms didn't make teachers' jobs easier and they weren't driven by pedagogy. For students, the result was a 'death by hyperlink' learning experience and a one size fits all approach which wasn't engaging." Yohan Dantan said.

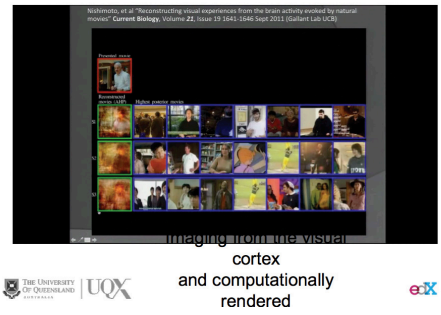
This is what myEd App, a next generation learning platform helps to solve. Designed by thousands of students, teachers and schools from around Australia, the myEd app enables teachers in minutes to easily create and share engaging learning activities as quests, with whole classes or individual students. Real time data on student progress is at your fingertips, to make it easy to determine where help is needed.

The myEd app works on all devices, is perfect for inquiry based learning, open learning environments and flipped classrooms and enables schools not to focus on just substitution but to use their device rollout as an opportunity to move towards 'redefinition'.

Teacher and ICT Leader Fiona Knights at Our Lady of Southern Cross at Wyndham Vale,Victoria said: "Creating learning quests is so easy for teachers to do, students absolutely love the quests and receiving badges. I love that I can really personalise the students' learning, myEd's has really improved the way I teach."

www.myedapp.com

Slides from the show



Professor Long's video from UC Berkley demonstrating that dynamic natural visual experiences can be recovered from very slow brain activity

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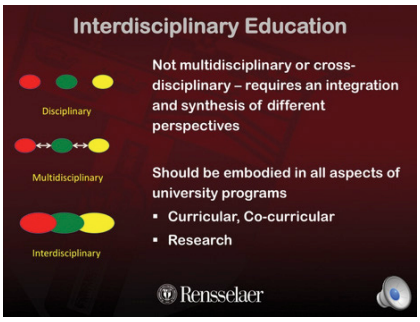
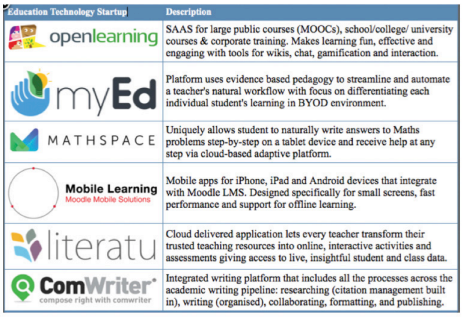
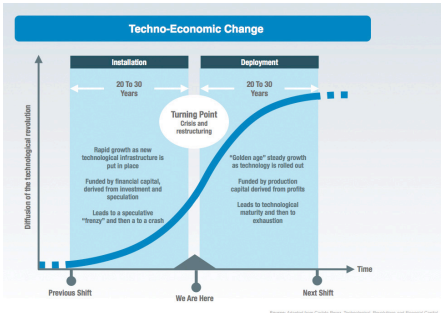
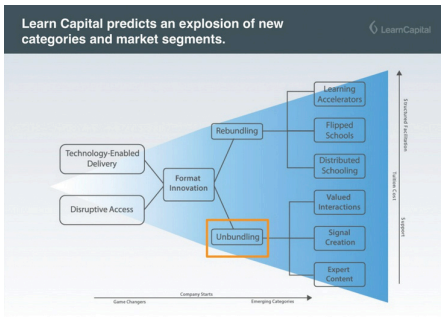


Prabhat Hajela, Provost from Rensselaer Polytechnic Institute, NY spoke on what it means to provide an interdisciplinary education with a focus on intellectual agility.



Australia has over 34 emerging companies applying recent digital advances to assist educators.





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introduced the concept of a personal 'Code Halo'; the information that surrounds people, organizations, processes and products and suggested this could be part of a future model of personalized learning.

Local educational technology leaders

Mirroring the rapid growth in the US edtech sector, Australia has over 34 emerging companies applying recent digital advances to assist educators.

Six of the best were showcased at the conference.

The goals for the EdTech Pitch Session were to:

- Highlight disruptive technologies being introduced locally into education
- Discover the motivation and vision behind the products
- Introduce them to education leaders

The benefits to the sector of a strong local EdTech ecosystem include greater responsiveness, more focused solutions and lower costs.

For example working with local technology developers and instructional designers means they can quickly understand issues facing schools and incorporate appropriate features in their software. MyEd Online noted that they encouraged schools to view them as their local 'pedagogy research lab'.

For example adaptive learning programs for literacy and numeracy benefit from deep understanding of State curriculums and Australian learning styles to ensure students are motivated to learn. This requires a degree of customisation multinational providers aren't always prepared to invest in.

The trend away from prescriptive content and more authentic learning exercises is another area that benefits from conversations with local technology providers and their instructional design teams to ensure schools have the most appropriate, user-friendly tools.

Since all the EdTech startups featured aim to reach a global audience, including Asia, their processes have been designed to be highly scalable. They have also incorporated at least one highly disruptive SMAC technology (Social media, mobile devices, analytics and cloud computing), which allows their pricing to be globally competitive.

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Global thinking

Professor David Sadler, Deputy VC (Education) University of Tasmania typifies the movement to more global thinking in Education. His University is a key member of OER university, a virtual collaboration of 31 like-minded institutions from five continents, committed to creating flexible pathways for OER learners to gain formal academic credit. The OER university aims to provide free learning to all students worldwide using OER learning materials with pathways to gain credible qualifications from recognized education institutions. It has a community service and outreach mission to add value to traditional post-secondary education.

Lateral thinking

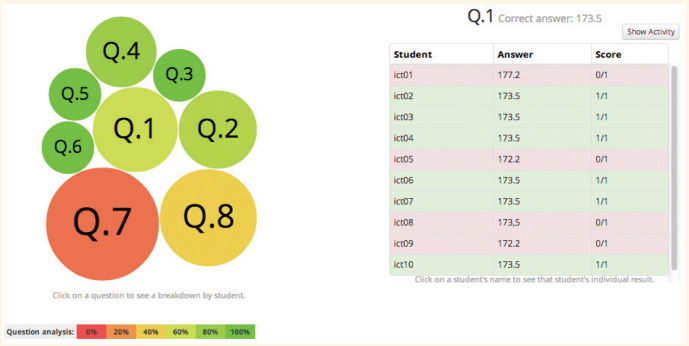
Prabhat Hajela, Provost from Rensselaer Polytechnic Institute, NY gave a fascinating talk on what it means to provide an interdisciplinary education with a focus on intellectual agility.

They have a significant focus on data analytics. Data is viewed as on par with a natural resource and data literacy an essential skill.

Literatu aids teachers to extend the way they engage students

Question: If a teacher has developed lesson notes, questions and tests that have withstood the test of time, why should they be forced to throw them all away when the school moves into the cloud?

Mark Stanley, CEO of rapidly expanding Literatu says emphatically: "They shouldn't. Teachers don't become teachers simply to deliver someone else's pedagogy. Literatu gives teachers the ability to transfer their new or existing materials, from any format into interactive activities."



Literatu allows teachers to create activities in any preferred application and add interactivity through the system. It even lets teachers automate hand-written activities, to enable them to extend their engagement with students using their own materials instead of 'one size fits all' publisher created content.

It's a timesaver too, reducing the teacher's grading and correcting workload by over 75 per cent compared to the hours consumed by conventional marking of written work.

By using Literatu's real time functionality teachers can see 'who gets it and who doesn't' for the class as a whole, for groups of students and for each student. With live class monitoring teachers can see results are they are entered… so they can stop the class and review learning based on live information.

"It is astounding just how much data a class of 30 students, let alone a school, creates in a school term. It is a tragedy that this learning data is neither captured, made visible or analysed." Mark Stanley says. "With Literatu, interactive dashboards and visible data feeds, help surface the data that means the most to teachers and students.

Delivered as a cloud application and fully integrated with Edmodo, Google Apps for Education and Office 365, Literatu blends into existing school ecosystems.

Literatu is already in use in Indonesia, the Philippines, Malaysia, Singapore and in 1500 schools in the US. One of the first Australian schools to adopt the system is Stella Maris College in Manly NSW.

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They also have an innovative Mandarin project which involves immersion in the language and Chinese culture in a multiplayer mixed-reality environment, where they use game based augmented reality with input from researchers from cognitive science, computer science, communication and media.

In summing up, Pradeep Khanna, CEO Global Mindset commented; "Teaching and learning are going through a painful transformation, driven by disruptive innovation emerging not just through digital technologies and Ed Tech start ups but also by broader innovation in approaches to leadership, and global and lateral thinking".

Reforming education

Harvard Educator, Richard Elmore, once said that reforming education was like shifting graveyards; it wasn't designed for it. These days there is more acceptance of change, but real sustainable improvements in teaching practice involving more than 30 per cent of teachers or lecturers is slow going. While there is a high level of personal awareness of the need to change amongst education leaders, it is sometimes hard for institutions to plan for it in a strategic way.

A strong local EdTech community, with support primary and secondary teachers, education and ICT academics and school administrators can help provide the right environment for the 'unbundling' of education as we pass the 'tipping point' for techno-economic change.

Since the conference, a number of researchers from Swinburne University of Technology (Leon Sterling), UNSW (Wan Ng), University of Sydney (Michael Jacobsen) and University of Melbourne (Ben Cleveland) have offered assistance to the six featured Edtech startups, including encouragement of their PhD students to consider collaborative research in areas such as such as advanced analytics, pedagogy, next generation learning spaces, peer instruction, efficacy trials.

As a measure of the international recognition of the innovation of our local EdTech companies, Eric Mazur, Area Dean Physics, Harvard, and inaugural winner of the Minerva Prize for extraordinary advancements in teaching innovation, excellence and impact, recently agreed to mentor MyEd Online, having seen how they have managed to energise student and teacher interaction by providing a clean, streamlined process that automated a teacher's natural workflow.

On 29th October Global Mindset will hold their 12th conference, 'Rethinking Learning and Assessment', featuring Eric Mazur. MyEd will have an opportunity to present some of the Peer Instruction features they are building into their solution. Literatu, MathSpace and Xorro will also be showcasing schools applying their solutions.

The conference is all about students and teachers and how they can improve learning. The common teacher response is that finally the technology can take a back-seat and so people can focus on desired student outcomes.

Speakers with deep practical experience in learning from; University of Canberra's Inspire Center, a hub for new approaches to learning, communication and collaboration; Sydney Center of Innovation & Learning (SCIL), ACARA, ATC21s, OLT and ESA will discuss ways that content and assessment can be rethought to deliver desired outcomes.

The conference will again be 'flipped' and speakers notes available beforehand so participants can come prepared. There will also be optional workshops to allow educators a deeper dive. The venue is the Australian Technology Park, Sydney; http://assess2learn.com.au. Past conference speaker slides are available on request.

ET

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Technology (driven) Innovation (for) Learning (and) Teaching.
Global mindset, Integrating Australia with Asia