



Smart Education

We have an opportunity to transform Australia's education system to: engage more with students; empower teachers and administrators; and develop a workforce with high value, global skills.

Why?

Australia's education system is a construct of the industrial age: our traditional classrooms were based on one-way learning and designed to prepare students to work in a manufacturing-based economy. This model is now redundant.

Today's students, exposed to digital technology from birth, do best in an interactive environment – where learning is experiential and involves high levels of sensory stimulation. We need to build this as standard into Australia's curriculum. Work sheets, rote learning and lecture-based teaching are no longer appropriate.

At the same time, administrative tasks and processes have increased the burden on teachers. We must ease this burden, freeing our educators to focus on what they do best.

We need our education systems to teach the skills Australians need for a digital economy. Globalisation and technology advances are rapidly changing skill requirements. Tomorrow's graduates will primarily be employed as knowledge workers in our services-based economy. We need to give them the skills to succeed in this very different work environment.

And we need to make the most of our dwindling talent pool, by offering world class education to every Australian child – regardless of socio-economic status.

What?

A Smart, multi-disciplinary student-centric education system – linked across schools, tertiary institutions and workforce training, using:

- Adaptive learning programs and learning portfolios for students
- Collaborative technologies and digital learning resources for teachers and students
- Computerised administration, monitoring and reporting to keep teachers in the classroom
- Better information on our learners
- Online learning resources for students everywhere

How?

Engage our students...

with interactive curriculum and learning resources and programs to rekindle an interest in science, and online learning

We need to rethink standard teaching methodologies to engage with the digitally-savvy students in our classrooms. Technology opens the door to richer learning tools and encourages more engaging teaching techniques. We need to help teachers use technology to captivate and engage students through visual, audio, kinaesthetic and sensory stimuli.

We can do this with online, interactive learning environments that cater for each student's abilities and learning styles. Such systems can assess performance, providing real time feedback for students and the teacher. This will help close the widening gap in the educational standards of students from different socio-economic groups. Using online teaching and learning resources, we can provide the same educational experience for all students.

SMART IS Flexible learning in an interactive learning environment

SMART IS Accessing world class digital content via online education sites

SMART IS Sharing digital teaching resources across Australia and the world

Immersing preschoolers in technology

The IBM KidSmart Early Learning Programme gives Australia's disadvantaged preschoolers the opportunity to experiment with information technology while improving literacy and numeracy. According to the Associated National Schools Network, the program is also improving digital literacy.

Providing online education

IBM's www.tryscience.org enables young Australians to put their sense of curiosity and wonder to work to explore all kinds of phenomena through a scientific lens. The site is visited by many Australian students each month, bringing them world leading science resources.

Networked teaching systems

Through IBM's Reinventing Education Program, China is using a low cost, national networked classroom teaching system called Blue Sky that can be accessed in remote and developing regions, improving the quality of teaching and allowing students and teachers to access new learning methodologies, curriculum and resources.

Empower teachers and administrators...

with smarter system-wide administration, content sharing and development tools and educational communities

We can automate many of the time consuming administrative tasks in our education system – and not just those at the classroom level. Data and information can be collected, shared and analysed locally and system-wide for monitoring and assessment in real-time. Computerised analysis can help governments and institutions make fast, accurate policy and resource allocation decisions.

Technology will speed the processes of providing curriculum to, communicating with and managing our education communities. We have the potential to gain real time, and better information about our students, putting the learner at the centre of our education system.

Collaborative technologies are becoming increasingly valuable tools in developing educational content. Developing subject-specific content is time-intensive and inefficient with many educators developing with separate solutions for the same problem. Educators need their own online communities to pool content development and share ideas and experiences.

We need to continue to move towards student-centred learning, where school data is provided in real time to teachers to guide, improve and individualise instruction and resources.

SMART IS Delivering education through different devices – from televisions to ipods to mobile phones to netbooks – beyond our schools and into homes

SMART IS A digital learning portfolio that gives students, teachers and parents a total view of a student's progress and needs

SMART IS Online real time testing and analysis

SMART IS Network-based collaboration among and between countries to share their ideas and create new knowledge – a You Tube for educators!

Electronic roll call

Pymble Ladies' College in Sydney introduced an electronic student roll call system that is increasing face-to-face teaching time by 6-8 minutes per lesson.

Develop high value skills...

by creating new, multi-disciplinary qualifications, and improving problem solving and cultural awareness with practical experience

In the 21st Century workplace, most repetitive functions are automated, and employers value workers for their creative abilities to synthesise information, solve problems, think laterally and be innovative.

Innovation and value will be created by people who don't just have technical skills, but have business understanding and the ability to adapt and continually learn. In addition, as business becomes increasingly global, Australians will need high levels of cultural awareness to work with colleagues and clients in other countries.

Increasingly, jobs will require multi-disciplined skills. We need to teach multi-disciplined tertiary programs that better prepare students for the real world of work.

Workers who adapt to frequent change and learn new skills quickly are needed. To develop an Australian workforce that will succeed in this new environment, our schools need to teach in a more interactive way that fosters thinking, creativity and flexibility.

Schools can't do the hard work of educating students on their own. We must reach outside the traditional boundaries of our educational institutions and form learning networks with the businesses that will employ our future workforce

SMART IS New qualifications that fuse multiple capabilities such as services science, management and engineering.

SMART IS Different leadership development strategies that benefit business while contributing to the community.

SMART IS Encouraging diversity of experience and thought to help solve complex global problems

SMART IS Linking learners with mentors from industry

Creating new qualifications

Services Science is a new multidisciplinary area of study aimed at developing the skills required in today's services-led economy. Services Science, Management and Engineering (SSME) brings together work in the more established fields of IT, engineering, operations research, business strategy, management sciences, and social and cognitive sciences. SSME programs have been set up at Sydney, Monash, RMIT, Deakin and Bond Universities.

Improving problem solving and cultural awareness

IBM's Corporate Service Corps is a leadership development program bringing together teams of high-potential employees to work on community service projects in developing countries. The teams are exposed to new challenges and perspectives, testing their problem solving skills, building creativity and enhancing their ability to operate as global citizens.

Engaging with tertiary institutions

MyScience is a unique education model which develops authentic scientific investigation skills within the primary school environment. A collaborative programme between IBM, University of Sydney, the Australian Catholic University and the NSW Department of Education and Training, MyScience aims to inspire an enthusiasm and interest in science education within primary school communities.

Mentoring from business

Since 2002, IBM volunteers have mentored more than 750 Australian school students using innovative online tools. The program is helping to bridge the connection between industries and schools, giving students a better understanding of career pathways. When online mentoring was measured against students involved in face-to-face mentoring, online participants had equally good outcomes.

When?

NOW! There's no better time to start building a smarter education system – a student-centric, digital, collaborative approach to education that prepares the next generation to participate in the digital economy.

Let's work together to drive real progress in Australia.