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Fostering innovation
in our education
system

Employment-based
pathways provide
opportunity for
innovation

The innovative
nation begins in
early childhood



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Innovation nation

I love to cook and this Christmas I was given a terrific colourful book stuffed with 'on trend' recipes for spelt, freekeh, buckwheat, quinoa, barley, amaranth, chia—the list is endless. As we were tucking into grilled lamb chops, mashed spud, carrots and peas in the 1950s, who could have ever imagined the Australian cuisine of 2016. Whilst we cannot always predict the future we do know that creative new ideas are changing our world at every moment, finding solutions for challenges, and propelling us towards greater autonomy, productivity and progress.

Prime Minister Turnbull recently announced a renewed focus on driving greater innovation, the 'innovation agenda', a worthy initiative to ensure that Australians are not left behind in a meat and three veg world, but are fully equipped to drive and welcome new opportunities, constantly embracing constructive change. Disruptive change may be an annoying cliché, but the capacity to operate in radically different ways is fundamental for our future national prosperity.

Transformed and transforming education is the essential foundation for the 'innovation agenda'. Few people are genetically innovative. They may be gifted with a creative flair, powerful imagination and have inspiring and motivated parents, but without the essential content building blocks and the guidance which opens new pathways, their innovation potential is rarely fully realised.

If the government is genuine in its aspiration that Australia is a global innovation leader then it must create the fertile educational ground for innovation to flourish. Investing in more teacher education and professional development which equips teachers to develop competent and adaptable learners is a good start. Creative learning requires teaching which affirms process rather than product, understanding over memory, thinking over knowledge and allows students the freedom to discover, create and learn from failure. Teaching that is multidisciplinary, exploits new media and technology and engages learners to find the unforeseen connections between different subjects will create the environment for innovation. A lot has also been said about encouraging more study of maths, science and languages, but there has not been universal benefit from these programs especially as the 'Gonski' commitment to increased funding and equity has not been realised.

The Australian College of Educators has long been a voice for the broader teaching profession. We have an informed and significant contribution to make to public policy development because of the engagement of our members across all educational sectors. It is also our role to continually remind the community and policy makers that access to high quality educational opportunities for all Australians is fundamental for individual fulfilment, social cohesion and our nations' growth.

As I commence my period as National President of the College, I am grateful for the strong leadership of Professor Stephen Dinham OAM, FACE over the past two years. Stephen has not only strengthened the administration of the College, but has regularly connected with members across the country and consistently encouraged strong membership growth. As an experienced and highly regarded educational leader, he has been a powerful advocate for ACE and the profession and leaves big shoes to fill. I am pleased that he will remain on the National Board as Immediate Past President.

I look forward to meeting and hearing from you in person as we work together, through the College to enhance education for all. I am a very strong believer in the transformative power of education and believe that every person, whatever their life circumstance or geography should be given the best chance to succeed. I know our members share this commitment and together we can make a real difference.

The Hon. Bronwyn Pike, MACE
ACE National President

Fostering innovation in our education system





MINISTER FOR EDUCATION AND TRAINING SIMON BIRMINGHAM

The opportunities created by innovation are a top priority for the Turnbull Government and for me as the Education and Training Minister. My number one priority is to ensure this generation and those to come have the right skills to not only fill the jobs of today, but to help create the jobs of tomorrow. Our success relies on taking advantage of the opportunities created by economic and technological change and being at the forefront of global innovation.

As this is the first time I have written for *Professional Educator*, I wanted to highlight how important it is to me to be a Minister who is consultative, who listens and learns as we work together to strengthen an education system that already supports the great minds of tomorrow.

Innovation is, by its very nature, a continual work in progress—one that must constantly evolve. Nonetheless, in prioritising the National Innovation and Science Agenda we're very focused on continuing to put students first in all our policy and decisions, because enhancing their future is the prime motivator for our initiatives.

Innovation, from classrooms through to boardrooms, is critical for Australia to deliver new sources of growth, maintain

high wage jobs and seize the next round of economic prosperity. It's essential for shifting our economy from one focused on mines to one that emphasises minds.

Innovation is about new and existing businesses creating new products, processes and business models. It's about the education system examining its systems and coming up with better, more effective ways to teach our children and to introduce them to new ideas.

It's about creating a culture that backs good ideas and learns from risks and making mistakes.

In classrooms

Under the National Innovation and Science Agenda, the Turnbull Government will invest \$51 million over five years to help Australian students embrace the digital age and prepare them for the jobs of the future.

We need to make sure that this and the next generations of high school graduates have the skills to equip them for the workforce of the 21st century.

That means we need to teach our students coding and computational thinking; not just as users of technology, but as creators. This will arm young Australians with skills in problem solving, ►

critical thinking and logic. The way that young Australians adopt new technology today, you'd be forgiven for thinking these are already outcomes being achieved by most, if not all schools students.

The *National Assessment Program Information and Communications Technology Literacy Report* released at the end of last year found that only 52 per cent of year 10 students and 55 per cent of Year 6 students met the proficient standard of ICT Literacy. Clearly a thirst for social media does not automatically translate into being competent in the practical use of new information and communication technologies.

We can and must do better through extending and expanding education in these areas.

The Turnbull Government will:

- make online computing challenges available nationally for all Year 5 and Year 7 students
- provide information and communications technology (ICT) summer schools for targeted groups of Year 9 and 10 students
- develop a national competition called 'Cracking the Code' for Year 4 through to Year 12 in National Literacy and Numeracy Week
- support teachers to implement the Digital Technologies Curriculum through online learning activities and expert help
- help school leaders drive digital literacy and partnerships to bring scientists and ICT professionals into classrooms.

Just as we aspire to ensure students learn how best to apply technology for solutions, we can apply new technologies to assist learning in fields beyond those traditionally associated with being high-tech.

One highlight is the successful trial of an app that helps teach preschoolers another language. The initial feedback from parents, children and educators on the play-based languages learning

apps in the Early Learning Languages Australia (ELLA) trial has been overwhelmingly positive.

More than 1700 Australian preschoolers have learnt Japanese, Indonesian, French, Mandarin Chinese or Arabic as part of the trial of the *Polyglots* apps and with Australia more 'tapped in' than ever with the international community, these language skills are vital life skills.

STEM literacy

The other key national priority area which will influence our classrooms is the national approach to improve the teaching and take up of Science, Mathematics and Information Technology—the STEM subjects—in Australian schools.

While a good education starts with a solid foundation in literacy and numeracy, STEM subjects are essential to critical and creative thinking and analysis and problem solving.

Clearly STEM is one key to unlocking innovation potential, which is why the Turnbull Government has allocated \$48 million to improve STEM literacy across all demographics and age groups in Australia.

Schools form a critical part of a broader STEM education ecosystem which includes preschooling, vocational education and training, higher education and workplace training and development. Yet inequities still exist in STEM.

Girls, students from low socioeconomic status backgrounds, Aboriginal and Torres Strait Islander students, and students from rural and regional areas can be less likely to engage with STEM education and are therefore more likely to miss out on the opportunities STEM-related occupations offer. With 75 per cent of the fastest-growing industries requiring skills in STEM, we want to ensure all Australians have the same access to those opportunities.

A renewed national focus on STEM in school education is critical to ensuring young Australians are equipped with the necessary STEM skills and knowledge they will need to succeed.

The National STEM School Education Strategy was endorsed by all Education Ministers in December last year. It identifies five key areas for national action through which school education has the greatest leverage:

1. Increasing student STEM ability, engagement, participation and aspiration
2. Increasing teacher capacity and STEM teaching quality
3. Supporting STEM education opportunities within school systems
4. Facilitating effective partnerships with tertiary education providers, business and industry
5. Building a strong evidence base.

Based on the success of the Early Learning Languages Australia app trial, and as part of the National Innovation and Science Agenda, the Turnbull Government has committed \$6 million to the development of a similar STEM-focused app for the early years.

Literacy and numeracy

While we are firmly focused on the future and the domination of the digital age, we know much of that future will be based on foundation literacy and numeracy skills.

The Turnbull Government is looking to arrest Australia's slide down international comparison tables for mathematics and literacy through our positive *Student first* education policy and key measures as part of the Innovation and Science Agenda.

We need literacy and numeracy results to lift across all student levels. That is why we're investing a record \$69.5 billion over the four years to 2018-19, a 27.9 per cent increase across all schools from 2014-15. And while funding matters, what we do with that funding matters even more.

We understand that not all students learn in the same way and that all schools have their unique needs. This lies at the heart of our *Students first* approach.

Quality education relies upon quality teaching. That's why we appointed the Teacher Education Ministerial Advisory Group (TEMAG) last year to make recommendations on how we can improve initial teacher education. We have accepted almost all of TEMAG's proposals and we are working with the States and Territories to have those recommendations implemented. These reforms include:

- requirements relating to the selection of entrants to teacher education
- new requirements for all primary teaching students to complete a subject specialisation
- a greater focus on building partnerships and communication between initial teacher education providers and schools for improved professional experience
- a final year classroom teaching performance assessment
- requirements for providers to demonstrate the impact of their programmes on pre-service teacher performance and, ultimately, the new teacher's impact on their students.

These changes also include a focus on the personal literacy and numeracy levels of new teachers, which is why we have introduced a national Literacy and Numeracy Test for Initial Teacher Education Students from 1 July this year.

The test will provide a nationally consistent measurement of graduating student teachers' personal Literacy and Numeracy skills, as being equivalent to the top 30 per cent of the adult population.

We're ensuring parents and school communities have access to accurate information on student outcomes and are working with key stakeholders on strategies to help parents better engage with their child's education, as well as the rollout of the new national curriculum this year.

Work is also continuing to move NAPLAN to online delivery from 2017—an innovative and welcome step that will benefit schools, teachers and parents, including faster turnaround time of results, and better diagnostics of students' performance.

Other connections

Education is a lifelong experience. We know the early years of a child's life have a profound impact on the future cognitive, social, emotional and physical development. That's why we are investing around \$40 billion in child care and early learning support over the next four years, including more than \$3 billion in increased funding under the *Jobs for families* childcare package, supporting parents to balance work and family life and children to access early learning opportunities.

Learning starts with parents interacting with their children from the earliest age and then, for many children, moving into the formal childcare system and on through school.

I want to conclude by capturing some of the innovative ideas I've seen recently that demonstrate from an early education and classroom perspective what can be achieved by thinking outside the box.

First is the Little Scientists' programme, which was rolled out last year. This initiative aims to instil in children a taste of and, hopefully, a love for Science, Technology and Mathematics from early childhood through fun and playful experiments for children and their teachers and carers.

We've given \$4 million over three years to support Little Scientists, part of the \$14 million committed to the importance of STEM learning for preschoolers under the Government's National Innovation and Science Agenda.

Another innovative classroom-based idea is a wonderful example coming out of the Broadmeadows Primary School

in Victoria. The school is part of Social Ventures Australia's *Bright Spot Schools Connection* which empowers school leaders by building a network of exceptional educators.

Broadmeadows Primary School, despite being in the lowest 12th percentile for socio-economic disadvantage, is getting great results for its students. Last year, the school's NAPLAN results were higher than any other school serving students from statistically similar backgrounds.

The school's Principal, Keith McDougal has said that their philosophy is: 'Where you start doesn't matter, it's where you end up that counts.'

They use innovative approaches including putting together contracts, based on interviews with the student and their parents, to target each student's individual needs.

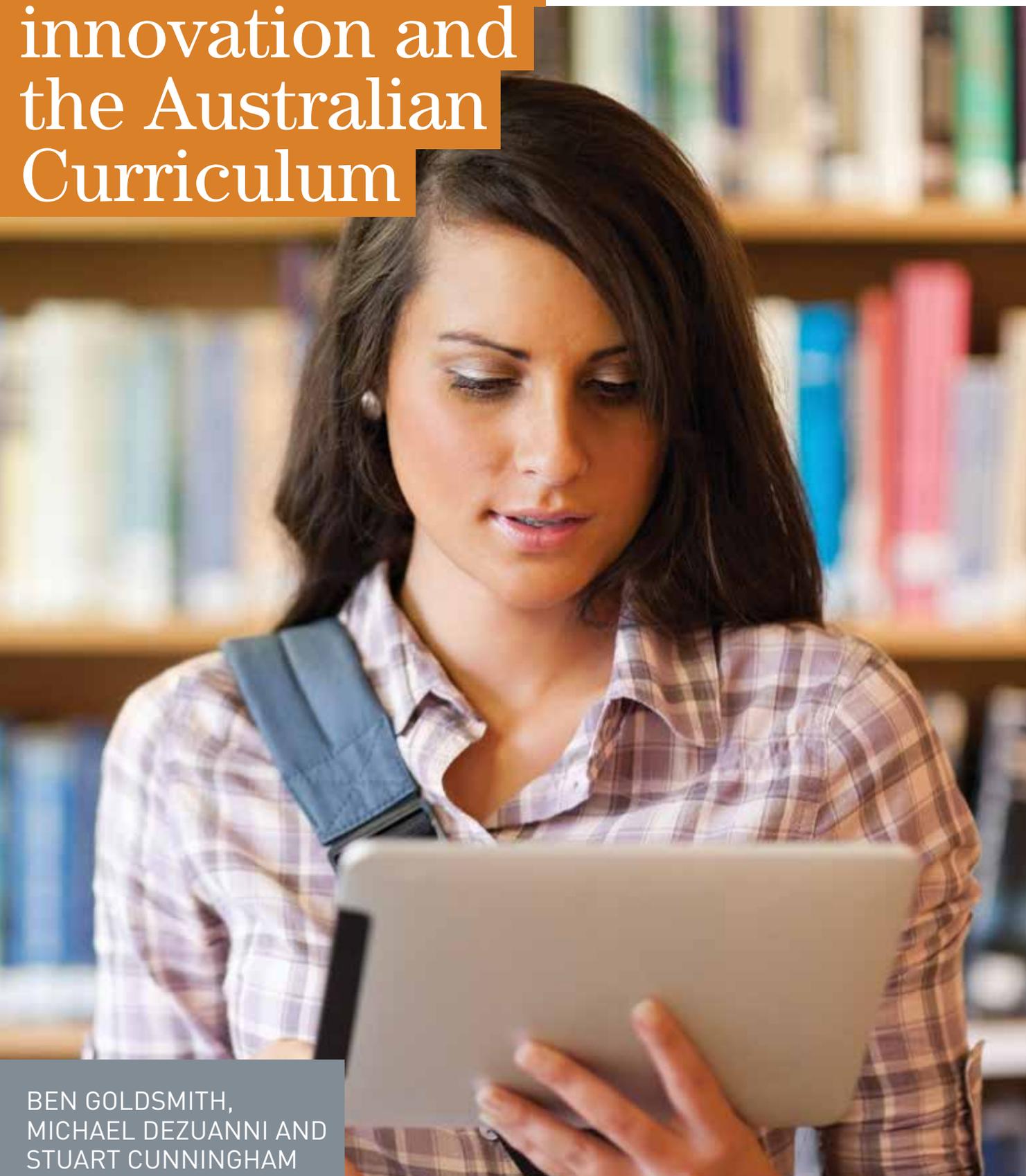
This and examples like it are why we are responding to the growing demand for greater school autonomy through the \$70 million Independent Public Schools initiative. It helps schools build strong communities, give schools greater local decision making powers and increase the engagement of parents, community groups, business and industry in the life and operation of the school.

What it all means for you

The government is not just committed to the importance of the idea of innovation, but is putting its money where its sentiments are in encouraging, nurturing and delivering a culture of innovation across Australia and in our classrooms.

What does a culture of innovation look like in our classrooms? I think the pieces in this magazine will give you a taste of that. But as our programmes are implemented it will look like a culture where ideas constantly bubble up; old practices are challenged and both teachers and students feel the freedom to be innovative based on a solid foundation of skills and knowledge.

Screen content, innovation and the Australian Curriculum



BEN GOLDSMITH,
MICHAEL DEZUANNI AND
STUART CUNNINGHAM

One of the markers of digital disruption and innovation in education is the ubiquity of screens and screen content in Australian classrooms. No longer is screening a video in a class a significant occasion requiring a 'television trolley' to be booked in advance. Rather, screen content is now often part of the seamless flow of lessons in all subject areas, with shorter clips in particular likely to be used to enhance students' learning. The phased roll out of the Australian Curriculum in schools, coupled with the increasing pervasiveness of digital technologies, more reliable internet services, and changing approaches to literacy and learning have increased educational demand for quality audio-visual content. The growing use of screen content has stimulated innovation in content provision and, to some extent, in pedagogy and practice.

Both the Australian Curriculum and the Melbourne Declaration on which the curriculum builds explicitly emphasise the importance of recognition, appreciation and understanding of local and Indigenous cultural knowledges and experiences. Coupled with the growing demand for audio-visual content in general, this emphasis has encouraged increasing use of new, original and repurposed Australian screen content. How, where and how much Australian screen content is used in schools is currently the focus of our research as part of a major national project led by Queensland University of Technology (QUT) in partnership with Screen Australia, the Australian Broadcasting Corporation (ABC), Special Broadcasting Service (SBS) and the Australian Children's Television Foundation.

Formerly, the production of screen content for educational use in Australia was monopolised by the ABC, but in recent years an increasingly crowded and innovative media space has emerged. A complex mix of suppliers includes commercial operators like Clickview, DVC and Kanopy, not-for-profits such as the Campfire Film Foundation and Australian Teachers of Media (ATOM), subsidiaries of not-for-profits such as EnhanceTV and Informit EduTV as well as providers of free content such as the ABC (through its catch-up television service





ABC iView and its online education portal ABC Splash) and Australia's other public service broadcaster, SBS. Not all are prospering in the variegated education market, with only a few successfully developing sufficiently robust, user-friendly, relevant and scalable platforms. Traditional business models and service offerings have been disrupted both by the emergence of new players with quite different approaches and business models from those of traditional players, and by the adaptations made by existing players.

The ABC itself is still a significant player and a driver of innovation in this as in other areas of media production and use. From the outset, ABC Splash was designed to support the implementation of the Australian Curriculum, although the then Gillard Government envisaged it principally being used at home rather than in schools. ABC Splash combines clips of programs from the ABC's extensive archive of radio and television content, with commissioned, interactive resources. Education Services Australia has provided pedagogical guidance as well as writing metadata and supporting material that links the resources directly to the Australian Curriculum. To some extent ABC Splash is setting standards for digital education, experimenting with content provision, and innovating in areas that commercial competitors would not enter. For example, the Splash Live pilot program 'Making the News' combined the expertise of ABC Innovation, Television and News and Current Affairs, and the Australian Centre for the Moving Image (ACMI) in Melbourne, to connect four NBN-enabled primary schools in four states to develop news stories over a six week period culminating in a collaborative video streaming event. In pedagogical terms, ABC Splash combines social constructivist and directive approaches, and evidences public service media as a unifying force, forming a public and serving its interests. It embodies the persistence of public service broadcasting ideals of education, access and equity in the digital space.

While programs (or parts of programs) originally broadcast on free-to-air and subscription television still make up much of the screen content used in

classrooms, online video—and online access to content previously broadcast on television—is rapidly increasing in popularity and use.

YouTube in particular has opened up new possibilities in education. The video sharing site is the second most commonly used search engine behind Google (which owns YouTube), and has over one billion users per month around the world. The use of YouTube in university teaching has been the subject of research in a range of disciplines. The use of YouTube in schools is less well-documented. This is perhaps in part because of the bans imposed by most Australian education authorities, in response principally to concerns about videos of bullying, shortly after the service launched in February 2005. Most have since dropped or modified restrictions, although students are often (in theory) still barred from using YouTube in classroom situations.

Almost all of the teachers that we have interviewed at schools around Australia regularly use YouTube in their classes. A number of teachers provide their students with access to YouTube to conduct research and enhance their class-based learning in direct contravention of their education authority's policies. Many teachers provide students with references to YouTube videos to assist with their homework. Some produce their own content for classroom use, or direct their students to clips made by other teachers.

Teachers repeatedly told us that they consider YouTube to be an important educational resource that enables them to use previously inaccessible screen content. YouTube's other advantages for educators are the size of its archive—it has become the default video search engine for teachers seeking clips to complement their classroom teaching; the newness of relevant content, as well as the depth of the historical archive; the length of clips, typically under 10 minutes, that allows integration in a lesson as a discussion starter or reinforcement of an idea raised in class; and the production values of much of the user-generated content, with

youthful presenters and entertainment-focused presentation appealing to young people.

Our focus groups with students confirm the findings of several recent reports that young people use YouTube for educational purposes outside school. Students have reported regularly using YouTube to complement classroom learning, for homework, or to study something new. A smaller number also make and upload their own content. That is to say, students are being innovative in creating, seeking out and consuming screen content in their own time, and their media use is quite different from that of older generations. Truly innovative schools



and education systems will acknowledge this, and respond appropriately in their offerings.

In most of the schools in which we have conducted fieldwork, relatively conventional teacher-centred pedagogical approaches around screen-content use remain the norm. Screen-related innovation in these types of pedagogical approaches is limited to the incorporation of clips into the flow of the lesson, and in the extension of the teacher's role as curator of learning experiences to include a variety of screen materials. The Australian Curriculum does however offer the potential for pedagogical innovation in classroom use of screen content.

'Information and Communication Technology capability' is one of the seven general capabilities that are addressed through the content of the eight learning areas of the Australian Curriculum for students from Foundation to Year 10. Students can also expect to focus on these skills in the subjects Design and Technologies, Digital Technologies, and Media Arts. It seems inevitable that students will make and respond to screen content as part of their studies in all subject areas. Indeed, the leading edge pedagogies we have seen in our project invariably involve curriculum integration and rich engagement with screen content, right across the curriculum.

Making and responding to screen content in all subjects is an essential element of innovative educational practice required to prepare students for their digital futures.

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The innovative nation begins in early childhood

SUSAN KRIEG, MACE

The Turnbull Government's 'innovation agenda' can be viewed from many different perspectives. When viewing the innovation agenda from an early childhood perspective we ask the following questions: What role might Early Childhood Education play in developing an innovative nation and what might a 'culture of innovation' look like in Australian Early Childhood settings? These questions point to some of the challenges and possibilities Australian Early Childhood Education as we advance into the 21st century. Let's consider why the new national policy directives designed to promote a 'culture of innovation' in areas including Science, Technology and Business must include our very youngest citizens.

The first point to be made in relation to early childhood is that it is internationally recognised as birth to eight years. In Australia, as in many other countries, early childhood settings that span these years include childcare, preschool and the early years of school. Part of this discussion regarding the relationship between early childhood education and the innovative nation will involve blurring some of the existing institutional and pedagogical boundaries between 'prior to school' and the 'early years of school'. This is necessary because in many discussions of early childhood education the differences between the child-centred and play-based pedagogies of the birth to five years have often been contrasted with the 'teacher directed' and 'subject driven' approaches in the early years of school.

This simplistic binary does not reflect the nuanced approaches to pedagogy that are required across the birth to eight years if early childhood education is play its part in contributing to the national innovation agenda.

What role might early childhood education play in an 'innovative' nation building agenda?

The distance between nation building and Early Childhood Care and Education (ECCE) is so great that the connections are often missed. This is because young children's experiences in early childhood are often viewed as relatively separate and distinct from what happens in later life and therefore attempts at



nation building often do not include a consideration of the experiences of early childhood. However, in the contemporary discussions around Australia as the 'Innovative nation', it would be wise to reconsider the relationship between what happens in the years between birth-8 and Australia's future.

This is because there is a long-term and ever increasing body of evidence that suggests quality ECCE contributes to children's life trajectories (and therefore the broader national trajectory) far beyond their experiences in the early years. For example, evidence drawn from longitudinal research suggests children who have access to quality ECEC are less likely to engage in criminal activities or engage in substance abuse, and are more likely to gain long term employment (Heckman, 2006).

Research also suggests that providing young people with quality early childhood programs leads to more successful outcomes in the later years of school (Sylva et al 2004; Warren & Haisken-DeNew, 2013). Unfortunately, in many discussions regarding educational outcomes and achievement, the learning that happens 'in school' is perceived to be more significant than the years prior to school entry. Most often, engagement with the 3R's within schools (which in contemporary policy means Literacy and Numeracy) is viewed as more important than all the learning that has occurred before it. This perception persists despite research from Neuroscience, Economics and Social Science that suggests the experiences and learning that is done in the first 2000 days of life, *before* a child

enters primary school, are most critical in determining future trajectories in health, learning and behaviour (Van Leer, 2015). Therefore, the experiences prior to and in the early years of school are just as important as the experiences in primary, secondary and tertiary education. If the policy changes that are designed to achieve national 'innovation' are limited to primary, secondary and tertiary education, the policy focus is coming all too late.

Early learning experiences and long term outcomes

Experiences in early childhood have long lasting effects. One of the trajectories established early in life relates to children's attitudes to innovation and their capacity for creativity as adults. ►



For example, researchers have found connections between a 'predisposition to be playful' and creativity and innovation (Bergen, 2009). It seems that 'playfulness' (at any age) is an essential ingredient of innovation. Play has a long history of being valued as an important medium for learning in early childhood education. Bergen argues that 'children who are skilled at playful learning will be more likely to demonstrate creativity and innovation in their adult Computer-Technology, Scientific, Mathematical, and Engineering professions' (2009, p. 423). One of the most famous and oft-cited examples of this connection is from architect Frank Lloyd Wright who said 'I sat at the little Kindergarten tabletop... and played...with the cube, the sphere and the triangle...I learned to see this way and when I did...I wanted to design' (Wright [1957] in Bultman, 1997, p.2). Wright's experience of a Froebelian Kindergarten where children explored and manipulated systematically arranged play's with particular materials produced long-term outcomes. Brosterman (1997) also traces the early childhood experiences of Mondrian, Klee, Kandinsky, Albers, Itten and Le Corbusier as famous artists and architects who were exposed to a Froebelian play-based approach in early childhood with long-lasting effect.

What might a 'culture of innovation' look like in early childhood settings?

It is important to differentiate between the concepts of creativity and innovation. These concepts are interrelated in that 'creativity involves the act of *generating* a new idea or solution concept, while innovation refers to the act of either *applying* some creative ideas, or *creatively applying* a familiar idea, in such a way as to create value' (Milne & Leifer, 1999, author's own emphasis). We are left with the question of how these dispositions, capacities and habits of mind are developed, enhanced and sustained in Early Childhood Education.

In the Australian context, if young children's innovation and creativity are to be supported as they move between the play-based pedagogy they often

experience in prior-to-school settings and more formalised early years of school, then early childhood educators need to find a path between the open-ended outcomes of the Early Years Learning Framework (EYLF) (Department of Education Employment and Workplace Relations (DEEWR), 2009) and the Achievement Standards outlined in the National Curriculum (Australian Curriculum Assessment and Reporting Authority, 2009). The broad outcomes in the EYLF articulate broad capabilities and dispositions such as communication, learning and identity whereas the Australian Curriculum Achievement Standards are much more specific in terms of both content and process. This situation requires educators to provide a balance between a play-based child-centred and a teacher directed subject driven approach. Contemporary research regarding early childhood education has provided evidence that this balanced and flexible approach is necessary. For example, *The Effective Provision of Preschool Education* study (Sylva et al., 2004) demonstrated that children's learning is most effectively supported by a program that 'combines both 'teaching' and providing freely chosen yet potentially instructive play activities' (p. 6).

Play, innovation, and creativity

It is beyond the scope of this paper to examine the concept of play in depth. However, it is important to acknowledge that the word 'play' has many meanings. There are some common features of play that distinguish it from other human activities and learning processes. If people (and I use this word deliberately as the characteristics of play apply at any age) are experiencing enjoyment or internal satisfaction (fun), have (at least some) choice in the activities in which they are involved and there are no predetermined outcomes, the activity meets most criteria to be classed as play. To use Neumann's (1971) words, play is characterised by, 'internal control, internal motivation, and internal reality' (p.8). In the early years, this means children are creating their own realities, rather than being constrained by adult rules and outcomes. It is this element

of open-endedness and flexibility that is the key to the concept of creativity and innovation.

In ECCE, these characteristics are often on display as children engage in playful learning. There are multiple different types of play, including 'socio-dramatic' play and 'construction' and many more. In socio-dramatic play, for example, children transform roles, environments and objects to create imagined scripts and events. Playfulness involves 'fantasy and imagination' (Bergen, 2009, p.417). With regards to construction play, George Foreman asserts that play is not 'acting to make something happen' but rather 'acting to see if something might happen' and as children experiment with wood, clay, metal and other materials, they attempt to 'solve problems using divergent rather than convergent thinking'. He states, 'scientific and mathematical professions value this type of systems thinking' (Foreman, 2006, in Bergen, 2009, pp. 418-419).

In summary, when children play, they transform objects, they explore and change roles, and they develop themes and ideas to create new meanings. This transformative process is the basis of innovation.

The play of the future: A struggle for recognition

For those of us who have worked with young children on a day-to-day basis, it is easy to see the benefits of play: children demonstrate a level of engagement, enjoyment, satisfaction, commitment, persistence, and creativity that is difficult to replicate in other learning situations. However, producing 'causal' empirical evidence of the direct relationship between play and children's development has been more difficult. Lillard and colleagues (2013), for example, conducted a comprehensive review of the research evidence into the impact of pretend play on children's development and found that (for many reasons) there is limited research evidence of a direct causal effect. It seems that play is one of a cluster of factors that contribute to long-term learning outcomes such as creativity and innovation. This is because

there are many aspects of early childhood learning programs (such as relationships between adults and children, physical environments, time, materials) that work together to realise these outcomes. As Lillard and colleagues (2013) conclude 'some good studies favor an epiphenomenon position in which *child, adult, and environment* characteristics that go along with play are the true causal agents' (p.1, author's own emphasis). Most important in our discussion regarding the connections between early childhood education and innovation, Lillard and colleagues conclude that the lack of existing causal evidence that pretend play helps development should not be taken as an allowance for school programs to employ traditional teacher-centered instructional approaches that research has clearly shown are inferior for young children. The hands-on, child driven educational methods sometimes referred to as 'playful learning' (Hirsh-Pasek et al., 2009) are the most positive means yet known to help young children's development (p.27).

Some historical and social periods have valued play more than others. In the current Australian educational context (as in many other western countries) with its emphasis on competition and consumerism, play as a medium for learning, is struggling for existence. In this context, those advocating for better quality early childhood care and education have defended each child's right to play. Here we are defending the child's right to play as an important foundation of adult creativity and innovation.

Australia's development as an innovative nation will rest on shaky ground if decisionmakers do not pay attention to the early years. Australia's aspirations to produce the Frank Lloyd Wrights of the future will depend on our national long-term, sustained, commitments to our youngest citizens' experiences of education.

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Employment-based pathways provide opportunity for innovation

KIRA CLARKE, MACE

Australia is often described as having a generalist and unified senior secondary education system. In other words, we have a system of comprehensive secondary schools, within which the majority of young people undertake a discipline-based curriculum. The architecture of senior secondary education in Australia has as an accepted cultural norm: that young people participate in a common disciplinary core up until the age of 16 or until Year 10. After this, the models of senior secondary education across Australia tend to adopt a two-year model during which students can take both discipline based and vocational curricula to accumulate credits or points towards the satisfactory completion of their senior secondary certificate of education (for example: the Victorian Certificate of Education, the Queensland Certificate of Education, the Western Australian Certificate of Education).

Within these senior secondary certificates of education, governments have adopted different mechanisms for integrating curriculum that responds to the dilemma of low skilled and unemployed young people who finish school and do not continue in tertiary or further education. In other words, successive state and territory governments have engaged in

curriculum development processes that have made much more explicit the role of schools in developing skills for the world of work.

One of the most visible and formalised ways in which the senior secondary curriculum has been developed to provide school leavers with skills for accessing employment is through increasing integration of Vocational Education and Training in schools (VET in Schools) curriculum into the comprehensive senior secondary certificates of education (Keating 1995).

VET in Schools has received extensive policy, research and media coverage in the last five years. The previous Assistant Minister for VET in Schools, Sussan Ley, spent much of 2014 leading a national consultation process on VET in Schools, which culminated in the launch of a new national framework for VET in Schools in December that year. While it has been great to witness a renewed national focus on the place and role of vocational education within schools, an aspect that is less visible and far less discussed is the place of employment-based curriculum in schools. The purpose of this article is to illustrate the important role that employment-based curriculum can play in schools and the opportunities it offers for innovative cross-sectoral collaborations.

What are school-based apprenticeships and traineeships?

Employment-based pathways in schools, often known as School-based Apprenticeships and Traineeships (SBATs), represent one of the Commonwealth Government's key uptake strategies for boosting apprenticeship and traineeship figures in response to industry need (Australian Apprentices Taskforce, 2009). SBATs offer an opportunity for young people to commence a part-time apprenticeship or traineeship while still attending school. SBATs also allow students to gain their senior secondary certificate of education upon completion of Year 12, completing part of an apprenticeship or traineeship certificate and receiving a part-time salary. While uptake of SBATs was initially sluggish, participation has grown fairly consistently, from 6,100 in 2002 to 20,977 in 2014 (NCVER, 2015).

SBATs, as a model of employment-based training, have been found to provide a generally positive experience for schools, their students and employers (Smith and Wilson, 2002). Participation and transition data indicates that participation in an SBAT while still at school can reduce the chance of attrition from a full-time apprenticeship (Hill & Dalley-Trim 2008). Apprenticeship attrition, reaching as high as one in two in some occupations, remains a major challenge of the Australian employment-based training landscape. This attrition has been found to stem from a range of personal or background factors, training factors, employment/industry factors, and structural/system-based factors (Callan 2008; Volkoff & Jones 2007).

It is not just the potential benefits for retention and completion that make SBATs an interesting and significant element of senior secondary education in this country. As a formally integrated component of senior secondary certificates around Australia, SBATs provide an opportunity for schools to develop creative ways to timetable disciplinary, vocational and workplace-based learning. This is by no means an

easy endeavour, but it does provide a driver for schools to innovate and think more holistically about the learning and experiential components that go into making a young person 'workplace ready'.

SBATs offer an opportunity for school-based innovations

Key ways in which schools can and indeed are innovating in this space include: partnering with employers to allow students to participate in block placement during school holidays or during special block training weeks during term time; working with key industry partners to ensure that SBAT learners are given access to cutting edge facilities that would otherwise not be available in a school setting; and themed SBATs through which students package their occupational certificate (for example a certificate in community services or building and construction) with complementary disciplinary (for example Psychology or Biology for those undertaking a traineeship in Aged Care,

or Mathematics and Physics for those pursuing a building and construction apprenticeship).

As entry-level jobs become more scarce and the value of a school completion certificate in helping young people access employment declines, education systems are increasingly looking to schools to provide young people with the skills and attributes that are in demand in a volatile youth labour market. Employment-based programs, such as SBATs, are an important vehicle for developing these skills and attributes in an innovative and creative way.

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Does one size fit all when it comes to assessment?



RHONDA OLIVER



The innovation agenda and our schools

Towards the latter years of our son's primary school education a new girl joined his class. Lauren Mitchell had been enrolled 'out of area' so that she might attend the Western Australian Institute of Sport (WAIS) gymnastic program which was located at a stadium nearby. Through WAIS testing she had been identified as having the right physical attributes to make her an ideal candidate for such training. As she suggested herself, she was not necessarily the most talented, particularly in the beginning years, however, she has gone on arguably to become WA's most successful gymnast, competing at the sport's highest level—both Commonwealth and Olympic games, and winning a World Championship. It would seem, at least in this case, that the WAIS testing certainly proved to have considerable predicative validity as an assessment of gymnastic potential. Of course, this is not always the case, and for the many that are selected and trained only a few go on to succeed, even at the state or national levels.

Coincidentally, a couple of years later our son was also tested by WAIS at his local high school. Although having never so much as held an oar previously, in due course a letter arrived inviting him to try out for the rowing program. The focus of this particular testing unsurprisingly differed from that used for Lauren. Instead of examining such things as body shape, flexibility, strength and agility, it was based on his estimated final height and arm span—both of which were identified as ideal for the sport.

Our son was not interested—the thought of early morning starts were not at all appealing to him—and he declined the offer. Fortunately, however, these same physical attributes, combined with athleticism that has skipped a generation, lent themselves well to the sport about which he was and remains passionate; basketball. Although he has not enjoyed the level of success of Lauren, he has gone on to play more than a 100 games in the WA State Basketball League (SBL). Would he have been more successful at rowing? We will never know, but like Lauren we do know that his success was not built on physical attributes alone, like her it was also based on personality traits such as dedication, hard work and resilience; aspects that were not assessed and yet contributed, some might argue at least as much as the physical attributes, to their success.

Also 'untested' by WAIS are the athletes' individual contexts. As many elite sportsmen acknowledge, success also results from such things as familial support, socioeconomic background and opportunity. Would Lauren or even our son have done as well if they had come from different contexts? Again it is difficult to answer. What we do know is that, although there are exceptions, like educational outcomes, the playing field is not level to begin with and only goes on to become less level as we throw more contextual factors into the mix. For example, during our son's junior state basketball league career a number of African refugee background boys joined the competition. They were selected by club coaches because of their considerable height and athleticism. For various reasons, such as financial difficulties, lack of

▶ experience with Australian sporting culture and family difficulties—and despite considerable efforts from club members and by individuals—only one of the many has continued into the SBL ranks.

In my view, these sporting case studies serve as analogies for Australia's regime of National Literacy and Numeracy (NAPLAN) testing. NAPLAN does provide useful guidance for teachers (just as WAIS testing does for the selection of athletes). The results of the testing help educators understand their students' attributes, their learning trajectories and, perhaps more importantly, their literacy and numeracy needs. However, like WAIS testing, it is not infallible and it is just one measure. It is not the silver bullet that many politicians claim it to be!

There is no doubt that assessment is a vital aspect of the teaching cycle. It allows educators to determine what should be taught and how well the students have learnt what is taught. However,

as Davies (1968) so eloquently indicated, testing should be the obedient servant. Unfortunately the washback effect of NAPLAN is that it has instead become the master of the teaching cycle with many teachers teaching to the test. Even so, this is not necessarily a bad thing, if the test is comprehensive and meets the needs of the students then it may be a benevolent dictator. However, this does not seem to be the case for NAPLAN. The tests that are currently used do not appear to adequately cater for their specific and contextual needs of the many diverse cohorts of students that exist in our Australian school system.

Further, in the same way WAIS only tests a limited set of physical attributes, so too is NAPLAN narrow in its focus. However, unlike WAIS testing, NAPLAN subscribes to a one size fits all model. We would not use a disproportionately wide arm span which is advantageous to potential rowers to select gymnasts, yet by using NAPLAN

we are testing diverse cohorts of students using instruments that may be unsuitable for their needs, and rides roughshod over their backgrounds and experiences.

Specifically NAPLAN instrumentation and content reflect a western view of learning in spite of what may be the students' background (what they bring to the test) and regardless of whether their context requires them to have the range of skills tested. Without due acknowledgement it is governed by a hegemony about what is socially, linguistically and culturally appropriate. For example, as an assessment tool it privileges those who have Standard Australian English (SAE) as their first language (and in many cases only language), but at the same time it does not acknowledge those who might have the ability to communicate across a broad spectrum of languages, denying them the opportunity to demonstrate skill sets outside those deemed worthy.



As a consequence, those growing up in non-Western contexts are judged to have lesser ability because of the benchmarks that this testing regime encapsulates. This is particularly the case for Indigenous students participating in NAPLAN testing – which at present fails to take into account Aboriginal communication styles and cultural backgrounds (Wigglesworth, Simpson & Loakes, 2011; Peltier, 2010). The structure of NAPLAN does not give sufficient recognition to the fact that for many Indigenous students living in remote communities their first language or dialect is not SAE (Wigglesworth et al., 2011). In turn this has dire consequences for those students participating in the testing. For example, Wigglesworth et al. (2011) describe how Indigenous students living in remote areas who have never had newspapers delivered to their home may find it difficult to comprehend a reading passage about newspaper delivery complaints, as was the case in the Year 3, 2008 NAPLAN reading test (Wigglesworth et al., 2011). Similarly, Wigglesworth et al. describe how Indigenous students growing up in remote communities, most of whom have never been to a cinema, may have difficulty comprehending the concept of a film poster also used the same NAPLAN reading test (Wigglesworth et al., 2011).

In addition, NAPLAN privileges written literacy, as opposed to oral language proficiency (which is valued in Aboriginal society). This bias towards written literacy practices ignores the oral language traditions of Indigenous society and, in so doing, the particular needs of this cohort. Further, it ignores the fact that oral proficiency plays a vital role in an individual's success in society (Ong, 1982; Street, 1995). It also ignores the important role that oral language plays in the development of students' meta-cognitive abilities (Warren & deVries, 2009; Moschkovich, 2005). In terms of school achievement, oral language has also been found to correlate with improved literacy attainment (Ball, 2009). The written literacy bias of our teaching and of NAPLAN testing serves to alienate these students from access to mainstream success and subsequent benefits. There is a need for Aboriginal students' oral language achievements

to be documented, so that focus can move away from the deficit view as is encompassed in the current practice (Armstrong, Buckley, Lonsdale, Milgate, Kneebone, Cook & Skelton, 2012). There is a need to recognise their current oral skills and SAE development and, in turn, help them to improve their achievements. This is particularly the case for Indigenous students whose home language differs considerably from school, and later from workplace discourse (Oliver, Grote, Rochecouste & Exell, 2012, 2013a & b).

In *Professional Educator* November 2015 issue Chris Sarra asked the question 'What must we change to enable our children to learn best from us?' (p.12), as clearly change is needed, particularly for Indigenous students. As Sarra further indicates, there is a need to be innovative and to use 'dynamic approaches and processes' (p.12). This aligns well with Turnbull's Government recent announcement of an 'innovation agenda' for our nation. If innovation, as commonly defined, includes change and specifically more effective ways to meet need, then the question arises: 'Is innovation in our schools possible with the current 'one size fits all' assessment embodied in our national testing?' It does seem that for a 'culture of innovation' to be adopted within education, there is a need to develop alternatives beyond the monolith of NAPLAN and instead to consider the needs and pathways of learning for those whose contexts are not encapsulated within the current mainstay of Australian education.

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Financial literacy: A 21st century imperative

MILES LARBEY



An emphasis on educating young people for life in the 21st century challenges educators to not only support opportunities to innovate, but to also drive the innovation agenda. Allied to this, and foremost on the education agenda, is the need to embrace learning through real-life contexts. This is reflected in a range of Australian Government initiatives including a renewed focus on Science, Technology, Engineering, and Mathematics (STEM) subjects, emphasising the relevance of this area to ensure Australia's young adults are equipped with the necessary skills for the economy of the future (Macfarlane, 2015).

This policy imperative is strengthened by advice from the Mathematics by Inquiry Roundtable (Australian Government, 2015) which concluded that some students do not see the importance and relevance of mathematics to their lives and potential careers, and are missing out on being taught problem solving and reasoning proficiencies and connections to the 'big ideas'. Authentic learning is a key driver in achieving agreed goals of 'excellence and equity' as outlined in the Melbourne Declaration (MCEETYA, 2008). It is an aspirational collective responsibility of all Australians to support an education system that delivers successful learners, confident and creative individuals and active and informed citizens.

In recent years, STEM subjects have been identified as one area that could benefit from more pervasive and innovative teaching practice. In particular, educators have found that consumer and financial literacy has been a successful vehicle for real-life learning in the classroom. The Australian Securities and Investments Commission's (ASIC) MoneySmart Teaching program, for example, was developed by ASIC, the agency with responsibility for the Australian Government's financial literacy portfolio, to provide professional development for teachers and a suite of flexible resources underpinned by the Australian Curriculum. Financial literacy is an area of learning that students consistently find engaging and



the breadth of the issues to be explored encourages innovative programs of learning in school communities (ACER, 2014).

What is financial literacy?

Australia's collective National Financial Literacy Strategy 2014-17, launched by ASIC in August 2014 after extensive collaboration with over 6,000 primary and secondary teachers from around Australia, defines financial literacy as 'the combination of financial knowledge, skills, attitudes and behaviours necessary to make sound financial decisions, based on personal circumstances, to improve

wellbeing' (Atkinson & Messy, 2012, p.14). Sound financial decision making, ASIC argues, is a core 21st century skill strongly linked with improved financial wellbeing and greater participation in economic life; benefiting not only individuals themselves, but their families, communities and nations (ASIC, 2014).

Since the Global Financial Crisis (2007-8) financial literacy has gained prominence on the social and economic political agendas of many world economies. It is now identified as an important complement to financial market regulation, consumer protection and financial inclusion policies (Perotti, Zottel, Larossi & Bolaji-Adio, 2013). In 2012, the OECD/International Network on Financial Education (INFE) High Level Principles on National Strategies for Financial Education were endorsed by G20 Leaders. In response, as of August 2014, 55 countries have been in various stages of developing, implementing or revising a national financial literacy strategy that accords with these Principles. A number of countries are leading the way in terms of implementing a second national strategy based on their experiences and evaluation of the first set of national strategies: Australia is one of these countries. Launched on 1 August 2014, the National Financial Literacy Strategy 2014-17 is a flexible framework to guide the action of all stakeholders with an interest in improving the financial literacy of all Australians. This second generation strategy provides a wide range of activities related to financial literacy and supports innovative practice in development and implementation. Significantly, it emphasises the importance of engaging in the formal education system.

Financial literacy education, particularly through established education pathways such as schools and vocational training, adult and community education, is one of the strategic priorities of the Australian National Financial Literacy Strategy 2014-17—a focus consistent again with the guidance of the OECD which states that financial literacy education should be introduced as soon as possible, preferably in the school curriculum.

Why is financial literacy important?

Financial literacy education is aligned with the broad objectives of the Australian education system. Being financially literate enables people to be more confident and informed in the way they engage with financial providers, products and services and it helps them to understand their consumer rights and responsibilities in relation to their financial decisions.

Almost every Australian owns one or more financial products—think of any of the instruments you use to help you save, invest, get insurance, or get a mortgage, think of shares and bonds, or credit card agencies, and you are thinking financial products—and there is an increased responsibility on individuals to take responsibility for their long term financial security. Given this financial landscape, financial literacy, including investor education, plays a key part in promoting trust and confidence in the financial services system.

Teachers play an important role in preparing their students for the 21st century, and financial education is integral to the skills and capabilities required for young people to participate in the economy. Exploring STEM subjects and beyond using financial education as the context for learning presents opportunities for teachers and students to address the curriculum in a way that is meaningful and supports behaviours that encourage greater economic participation and support personal wellbeing.

Financial literacy in a broader context of consumer behaviour

There is no 'average' consumer. People have different and changing needs, preferences and confidence levels. As explained in the National Financial Literacy Strategy 2014-17, financial decisions are influenced by a range of shifting and sometimes conflicting factors, including an individual's life stage and past experiences, emotional impulses and cognitive biases, ►



► psychological, social and cultural factors, and other external environmental factors: see Figure 1 below.

These contextual factors and personal attributes mean that a multi-faceted and sustained approach by multiple stakeholders is needed to reach people at key touch points throughout their lives. People face different financial decisions at different stages of their lives and also in the face of specific life events like buying a house, having a baby or losing a job. Some decisions are only made infrequently.

Ensuring people have access to impartial information and a range of tools and guidance across the age spectrum is a core part of building their financial literacy. At the same time, teaching young people foundational knowledge and skills and good money habits at school is the cornerstone to bringing about long-term generational change.

Educating the next generation—a key priority

To have the best chance of success in improving Australians' financial wellbeing we need to teach our children how to manage money from an early age. Research into adults' financial literacy, including the ANZ Survey of Adult Financial Literacy in Australia, indicates that 18-24 year olds are consistently among the demographic groups more likely to have lower levels of financial literacy.

The OECD's 2012 PISA study of 15 year olds' financial literacy skills found 19 per cent of Australians in this cohort performed at the baseline of financial literacy proficiency and 10 per cent below it, while 15.9 per cent of students were identified as performing in the top range. Advocates of financial literacy education in schools suggest that school is not only the most effective place for this learning to occur but the best way of reaching a large number of young people from all socio-demographic backgrounds.

It has been over 10 years since the Australian Government first highlighted the importance of financial literacy in today's consumer-driven society. In this time ASIC has collaborated with

education authorities to seek innovative ways to engage students in this learning area. One key innovative development is ASIC's MoneySmart Teaching program which focuses on using real life context for learning. Trialled in over 90 Australian schools in 2012, ASIC's MoneySmart Teaching provides primary and secondary teachers with professional development and quality resources aligned to the Australian Curriculum and the National Consumer and Financial Literacy Framework.

ASIC's MoneySmart Teaching has five key components:

- promoting a curriculum based approach to teaching consumer and financial literacy in Australian schools
- providing teaching resources that use real life consumer and financial contexts for learning
- building teacher capability through professional development and personal learning
- creating partnerships across sectors to develop and implement a nationally consistent and collaborative approach to consumer and financial literacy education in schools; and fostering a whole school approach which recognises the significant role of families and the wider community in helping young Australians develop the knowledge, skills, attitudes and behaviours needed to make confident and informed financial decisions.

The first two components are focussed on promoting a curriculum based approach to teaching financial literacy in Australian schools and providing teachers with engaging resources such as videos and multimedia activities to use in their classrooms. Rather than treat financial literacy as a separate subject, ASIC's MoneySmart Teaching provides students from Foundation to Year 10 with real life learning in important financial concepts such as planning, saving, spending, investing and donating across a range of key learning areas. The program and associated resources supports interdisciplinary learning and promotes innovative constructs for teachers to explore with their students.

Partnerships with schools are key. Since 2012 through strong partnerships with the education sector, ASIC's MoneySmart Teaching has made significant progress, with more than 14,000 teachers completing professional development and more than 35 per cent of schools now engaged in some aspect of our program. The other key focus for our work with schools is to focus on innovation. Our work with schools has demonstrated that there is unlimited potential for innovative approaches and practices for engaging students and preparing them for life and the practitioners in schools are the ones driving these innovative practices. In November 2015 ASIC hosted a national financial literacy stake holders' forum in Sydney highlighting innovation. Panellists from all around Australia highlighted current initiatives in MoneySmart schools, considered how we can harness innovation to improve financial literacy and promote behavioural change, as well as providing practical examples of innovative and effective partnerships. The forum also provided the latest thinking and new directions in research, measurement and evaluation of these practices.

As education jurisdictions prepare to implement the most recent version of the Australian Curriculum, ASIC continues to work with stakeholders and respond to key priorities. Ultimately, the objective is to have aspects of financial literacy integrated into all of our nation's schools, from Foundation to Year 12, showcasing financial education in schools that will inspire educators to embrace additional opportunities in teaching and learning that extend beyond the classroom.

To have the best chance of improving the financial literacy of Australians, we must build on the significant work done to date by innovative and engaging programs to provide financial literacy education which have a long lasting impact on a child's behaviour and gives them valuable life skills. This requires sustained efforts from Australia's financial services, government, community and education sectors to bring together expertise, resources and commitment to help young Australians along their journey. The National Financial Literacy Strategy 2014-17 places the formal education

system firmly in the driver's seat and provides support to effectively teach financial literacy.

Through a combined effort across sectors, we will help not only young people, but Australian consumers more broadly, make confident and informed financial decisions and build more secure futures.

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Meddle not with them that are given to change

CATHERINE SCOTT, MACE

Increasingly schools are being asked to teach personal attributes, for example the capacity to be innovative. However, findings from cognitive psychology should make us wary about this trend. Innovation rests on creativity and the best evidence suggests that creativity or innovativeness does emerge from some personal set of dispositions but instead depends on deep learning in a particular field. It is worth examining the history of the concept of 'innovation' to discover the origins of the current trend.

We are all likely to agree innovation is a good thing as it forms the basis for the progress that we all believe is inevitable and desirable. It can come as something of a surprise to hear that innovation was not always regarded so positively. Learning something of the history of the concept can help us to be a little more cautious of claims about what we should be doing and the benefits that will accrue.

Originally—in the 13th century—'innovation', or 'novation' as it was known, was a legal term to do with the renewal of contract. By the 16th century 'innovation' had changed and broadened its meaning, but unlike today, it was not a compliment to be called an innovator. The term was instead an accusation, akin to being called a heretic. Intersectarian tensions were high and it was unwise to stray too far from doctrine, least one be accused of innovation/heresy and punished. One notable case from the 1630s was that of Henry Burton, a Puritan, who accused various bishops and church officials of

being 'innovators'. They in turn accused him of the same crime and he was tried, found guilty, imprisoned and had his ears cut off. There's an outstanding innovator of the year award nobody wants.

The term began to have quite different connotations during the 19th century as the Industrial Revolution reshaped society. It was at this time that the doctrine of 'Progressivism' gained ascendancy. Progressives believed in the inevitability and desirability of progress and the key role that science should play in producing the new knowledge that would power the discoveries and inventions necessary to drive progress. Innovation mutated from an accusation of meddling with the natural order to a highly valued attribute.

The period from around 1870 to 1920 was the golden age of innovation, with a continual stream of new processes and products invented. Since that time innovation has slowed, but is talked about more, particularly the use of 'lack of innovation' as a ready explanation for any number of economic and social ills. It is no surprise that the need for more of it is hot topic again.

As change became something to value, rather than fear, 'new' became inextricably linked to 'improved'. If this conjures up images of shampoo ads there's a reason for that. As mass marketing and consumption became powerful forces in the 20th century economy the imperative to be always producing new products or new versions

of old ones took hold. How else could market share be maintained without a new and improved product?

The language of the market seeped into all corners of human life, even to concepts of the self. It was no longer sufficient to simply live. Life had to be about self-improvement, of the body and mind: seeking health and fitness, dieting, plastic surgery even, and various attempts to reshape the mind, which Robert Bellah calls the 'incessant landscape gardening of the soul'. Naturally this also had advantages to those with something to sell because the restless quest to become a new improved self requires a plethora of products and services.

Education was not spared the search for 'new and improved' ways to teach. It is indeed routine that any pitch for a new educational strategy, technique or product starts with a description of school education that makes it sound as if there has been no moving forward since the 19th century and that schools remain dark Dickensian mills producing suffering but precious little learning. In contrast to this dreary state of affairs stands the new and of course improved product on offer that will transform education. It's new, it must be better.

The entwining of innovation with commerce can be traced back to Austrian economist Joseph Schumpeter's attempts to define the emerging buzz word. For Schumpeter 'innovation' differed from 'invention'. The latter was

▶ an act of scientific creativity undertaken without regard to its commercial implications. Innovation, on the other hand, was a process that occurred within businesses with commercial interests front and centre. The contemporary emphasis on the necessity for science to produce 'useful' knowledge leading to products and patents rather than, the implication sometimes seem 'frivolous', pure research demonstrates the extent to which Schumpeter's concept of innovation has come to dominate thinking about the creative process. Indeed just counting the frequency of terms used demonstrates that as mention of 'innovation' has increased discussion of 'invention' has declined.

To the members of economic school of thought to which Schumpeter belonged innovators, particularly the entrepreneur, was essential to capitalism's survival. The natural state of the economy was theorised to be a continuous cycle of boom and bust. After the collapse provoked by a bust entrepreneurs were the ones who kick started economic activity all over again via their creation of new businesses. The conception of 'creative destruction' has escaped

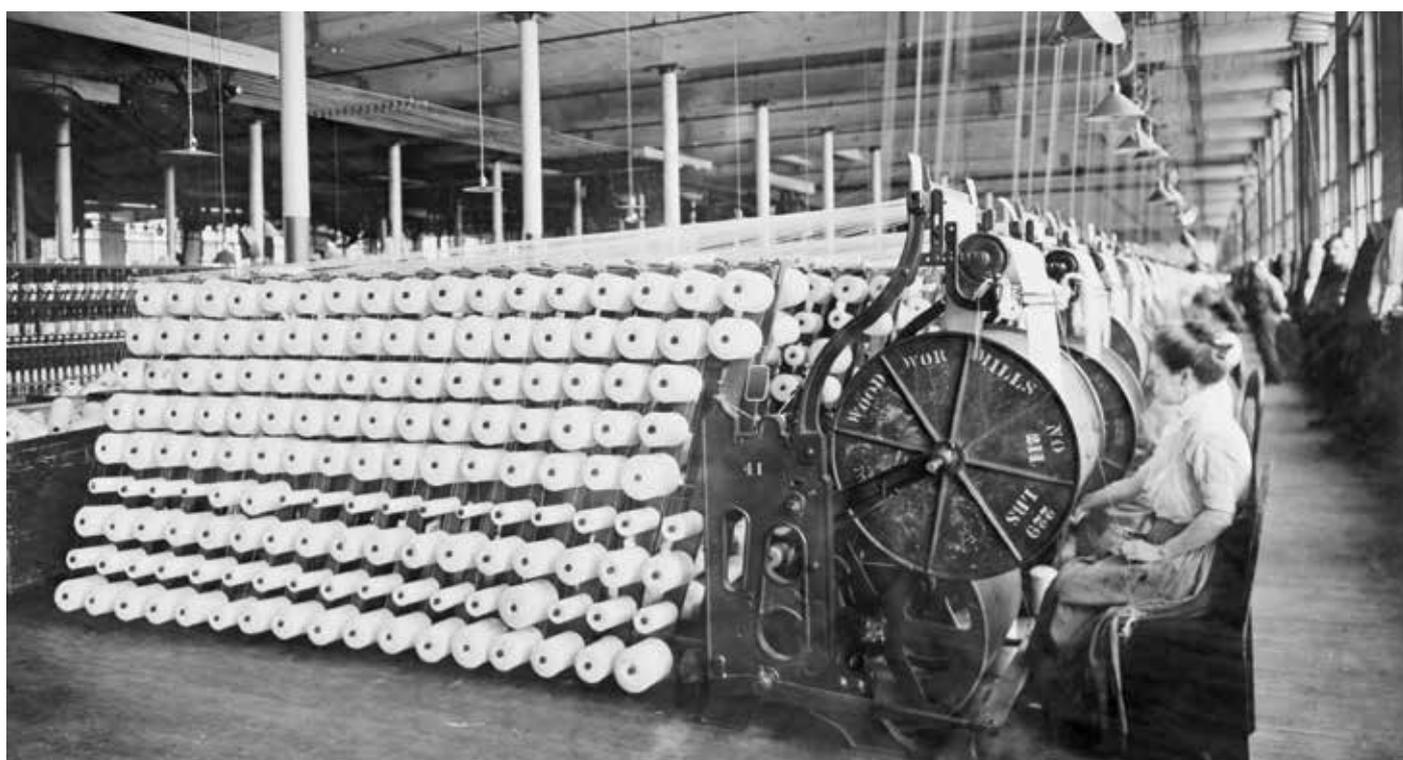
economics and it is common to hear change described as characterised by a necessary process of disruption that precedes the next great leap forward. Education is no stranger to this conception of the process of reform as 'slum clearance', that is, the dramatic sweeping away of the old to make way for the new (and improved). While 'revolutionary' has positive connotations currently it would be interesting to consider the experiences of those who have actually lived through one.

Improvement is not conceived of in these 'revolutionary' terms everywhere, however. For example in Germany, where neo-liberal ideas are less influential, large companies rarely seek radical innovations and entrepreneurs are scarce. Instead the highly successful large German engineering firms focus on quality processes and products and an emphasis on continuous incremental improvement. Similarly rather than seeing education as an institution that needs 'shaking up' in Germany the process of change is cautious and considered. Germany's steady ascent in the PISA ranks suggests this is an approach with a lot to recommend it.

Stepping outside the discourse of innovation might allow us to achieve a better perspective on what education can achieve and how it might do so. Instead of concentrating on the search for the next big thing, planning and implementing changes that are 'disruptive' without due consideration for the unintended consequences for the real people of education—students and teachers—another approach might be in order. Perhaps we can learn from the German approach and concentrate on doing the basics very well while maintaining a commitment to continual improvement. It would certainly spare us the disappointment when the next big thing, for example, ICT for example, fails to live up to its revolutionary promise.

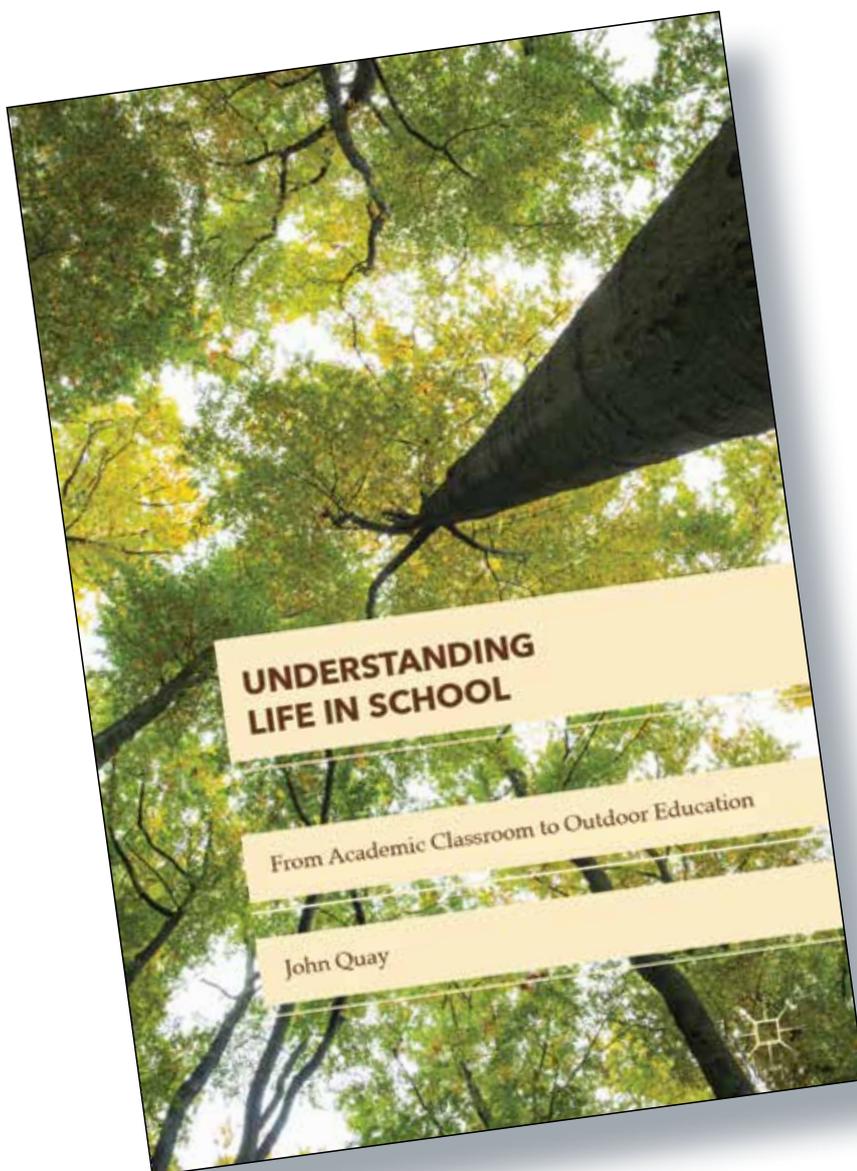
It's worth a thought and might be quite attractive to those battle weary veterans who've lived through more than their fair share of education revolutions.

Catherine Scott has taught in NSW primary and secondary schools and has also worked at a number of Australian universities teaching educational and developmental psychology.



Understanding life in school by John Quay, MACE

Book review by Greta Burns



A few weeks ago, I was asked to attend an outdoor education camp for Year 9's—a camp that I learnt was part of a research study looking at the influence of outdoor education experiences on student wellbeing. I thought of the book *Understanding Life in School*, which I had encountered through a Master of Education subject taught by the author.

The book is not like many others I've read about education and teaching practice, because instead of focusing on how a teacher should teach, this book goes deeper and makes you think about life, and education as part of this. The first chapter is called 'Understanding life so as to understand life in school'. The word 'ontology' was new to me, but I learnt about the importance of ontology to life and education, as it is the theory connected with being; I thought, how relevant is this? As a university student, a lot of the time we hear about theory being integrated into practice, or what *should* be integrated into practice—sometimes it doesn't seem that easy, not that straightforward. But this was.

The key was awareness that we live our lives in different ways of being a person, or occupations. And school camp provided an opportunity to see these 'ways of being' in action. Here occupations are

not just adult jobs, but all of the different identities that we take on in our daily living. In fact the book highlights in chapter three, 'Life in school: occupations and outdoor education', how one of the strengths of outdoor education is that it offers students a chance to be someone different, to take on activities that they may not have encountered before, like being a tent partner! I thought to myself, this is going to be exciting. I get a unique opportunity to witness who these young people are outside the parameters of the classroom, what occupations they take on naturally and how they function (especially without their phones). As it was a hiking camp, the students needed to take on the responsibility for packing, carrying and unloading the gear, setting up their tents, cooking and cleaning and of course, let's not forget digging holes for the toilet. All of these are different occupations. Observing these young people cook without a recipe and with one pot and minimal ingredients was a highlight, especially since many had told me that they had never really cooked at home before.

While the outdoor education leader and I provided suggestions along the way, the onus was really on the students. The notion of occupations as 'ways of being' really became noticeable. Some of the students considered themselves as being-a-cook, others as being-a-helper, and others as being-a-masterchef. What's important here is that, as the author conveys, occupations are constantly evolving, and even the same occupation may be interpreted by two young people very differently. The camp for me emphasised the importance of educating young people about themselves in the present, in the here and now, rather than on an end goal unforeseeable by many—something that traditional classroom teaching can so often fall prey to.

The author's ideas have influenced my own experiences as a first year classroom teacher. In term three, I took on a brand

new class. Twenty five eager faces peering at me, wanting to know who I was and what they would be learning from me—and I needed to know answers to these same questions, but from them! Chapter four in the book called 'Life in school: occupations and academic classrooms' highlights how school subjects offer different ways of being, like being-a-Science-student and being-an-Art-student. But one problem with these occupations is that not all young people engage with them. The author suggests some strategies for dealing with this in chapter five: 'Life in school is occupational'. The first is to 'discover' the young people I am teaching—not just as students but as people. Who are they? What are their interests outside of school? Who do they (would they) like to be?

An important point here, and a key theory highlighted by the author, is that being connects with doing and knowing. Ways of being are ways of doing and ways of knowing. This means that if I want someone to learn something, I need to not only worry about the knowledge or curriculum I am teaching, nor just about the activities I am planning, but also the occupations I am setting up. In other words, in planning a unit of work I need to 'arrange' knowledge (thinking about curriculum) and activity (thinking about pedagogy) within an occupation or set of occupations that taps into the interests of these young people. The author refers to this as 3D planning. By addressing occupations, my planning, and my teaching, I can move from 2D (normal scope and sequence) to 3D—where my students appear as who they are (or would more like to be), rather than just as students.

I applied the concepts of discovering and arranging in developing my 3D unit plan for the Year 8's topic of Body systems. *Discovering* influenced my thinking about the teaching strategies and learning activities. I was to include, by taking into

account which of my students (the young people I was working with) could be in this unit. Their interests and various occupations needed to be reflected in my plan. My goal became to teach about how the various body systems related to each of them; that is, how they are used in everyday life. I wanted them to feel a genuine sense of belonging and connectedness to the content. The *Arranging* involved mapping out the order of the instruction and activities in line with the occupations of the students. This can't happen if the teacher does not know their students well.

After chatting with the author, my lecturer at the time, I included in my unit a performance task for which the children were required to design and construct their own 'Body systems' game, and thus take on the occupation of being a gamer. Gaming was a shared occupational interest of many of the children in my class. Within the occupation itself, each child had a different interpretation of what it meant to be a gamer, and thus each brought unique strengths and weaknesses and aspirations to the task. By enabling these adolescents to embark on designing their Body systems game at regular points throughout the unit, rather than as an add-on at the end of the unit, they had the opportunity to make the content they were learning more meaningful by simply being-in-the-moment as gamers.

Through undertaking the subject and reading the book, I have come to terms with how we do not teach classes, nor do we teach students; instead, it is clear to me that we teach human beings.

Greta Burns has completed her Master of Teaching part-time while working full-time as a secondary Science and Mathematics teacher. She now teaches at Cranbourne Secondary College.

ACE 2016 Symposium

#ACE2016sym

The ACE 2016 Symposium 'Building a national consensus on education policy'

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Symposium Convenor,
ACE National President,
the Hon. Bronwyn Pike, MACE.

Program

4.00pm	Welcome and Acknowledgement of Country
4.15pm	Presentations by the Ministers
5.30pm	Panel discussion hosted by the Hon. Bronwyn Pike
6.00pm	Questions from the audience
6.15pm	Thanks and closing
6.20pm - 7.00pm	Drinks and canapes

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