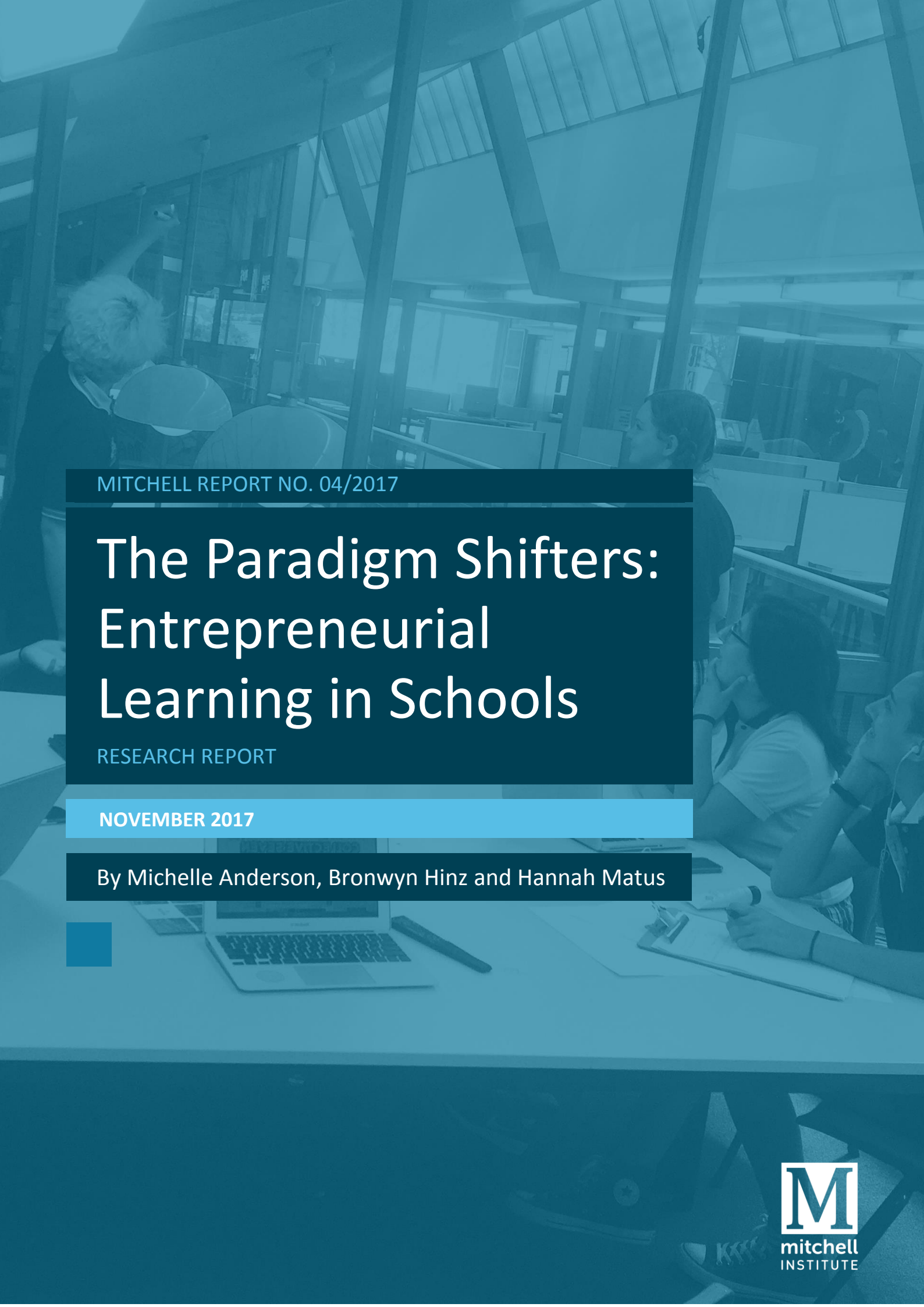

MITCHELL REPORT NO. 04/2017

The Paradigm Shifters: Entrepreneurial Learning in Schools

RESEARCH REPORT

NOVEMBER 2017

By Michelle Anderson, Bronwyn Hinz and Hannah Matus

mitchell INSTITUTE

This research report is one element of a collaborative initiative, called *The Paradigm Shifters: Entrepreneurial Learning in Schools*.

About the partners

Two major secondary principal organisations and a national education policy institute, with guidance from Professor Yong Zhao, began and led the initiative:

New South Wales Secondary Principals' Council (NSWSPC) is a professional body representing principals of government secondary schools and colleges in NSW. As a forward-thinking body, it provides advocacy, support, professional learning and collegial networks to improve learning outcomes for students in NSW public education. (www.nswspc.org.au)

Victorian Association of State Secondary Principals (VASSP) is a proactive professional association of secondary school leaders that supports and represents members, while building the capacity and quality of Principal Class Officers and aspirants. VASSP advocates for public education in Victoria. (www.vassp.org.au)

Mitchell Institute at Victoria University works to improve the connection between evidence and policy reform, promoting the principle that high quality education, from the early years through to early adulthood, is fundamental to individual wellbeing and to a prosperous society. We believe in an education system that is oriented towards the future, creates pathways for individual success, and meets the needs of a globalised economy. Mitchell Institute was established in 2013 by Victoria University with foundational investment from the Harold Mitchell Foundation. (www.mitchellinstitute.org.au)

About the mentor

Professor Yong Zhao is an international scholar and Professorial Fellow and advisor to the Mitchell institute. He was the initiative's inspiration and mentor. Yong is the Foundation Distinguished Professor in the School of Education at the University of Kansas. Yong's interests are the implications and intersections of globalisation, technology and creativity for education. His scholarly work and provocative writing in these spaces spans two decades, resulting in more than 100 authored and co-authored books and articles. (www.mitchellinstitute.org.au/author/yongzhao/)

About the research team

Dr Michelle Anderson works with education, philanthropy, business, and not-for-profit sectors, especially in the areas of collaborative leadership and innovation. Michelle is Director of Interface2Consulting and Adjunct Associate Professor with Mitchell Institute. She has worked as a secondary school teacher, National College for School Leadership, England, Senior Researcher, Australian Council for Educational Research, Principal Research Fellow and as a health and education executive. Michelle's work has included co-evaluating a social enterprise in schools' program for the Australian Centre for Rural Entrepreneurship and co-authoring books with school principals.

Dr Bronwyn Hinz works across Mitchell Institute's schooling and early education programs and has significant expertise in education policy design, reform, cohesion and outcomes. Prior to joining Mitchell Institute, she worked for the Foundation for Young Australians, the Ethnic Communities' Council of Victoria, two federal politicians, and the University of Melbourne, where she taught public policy and Australian politics. Her research has won multiple national and international awards and her analysis frequently appears in print and broadcast media, and is cited in scholarly publications.

Hannah Matus works as a policy analyst at Mitchell Institute, with public policy expertise in the areas of early childhood, schooling and child health and wellbeing. Hannah joined Mitchell Institute from the Victorian Department of Education and Training and has an academic background in the social sciences and psychology. She has considerable experience working on policy projects designed to improve educational outcomes for young people, including a Victorian Government initiative to increase engagement in education.

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- The Victorian Association of State Secondary Principals (VASSP), through the leadership of Judy Crowe (President) and the Executive Officers Marion Heale (immediate past) and Vicki Forbes (current), and VASSP's appointment of Wayne Perkins (immediate past secondary school principal) as the network coordinator for the Victorian schools.
- The New South Wales Secondary Principals' Council (NSWSPC), through the leadership of Chris Presland (President) and Christine Cawsey AM, Principal, Rooty Hill High School and former NSWSPC President, and the Western Sydney Region network of schools for the appointment of Dianne Hennessy as the NSW network coordinator.

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Finally, our thanks to Professor Yong Zhao for his ongoing support in his role as the catalyst for the initiative and its research.

Acronyms

The authors use these acronyms in the report:

ACARA	Australian Curriculum, Assessment and Reporting Authority
ATAR	Australian Tertiary Admission Rank
ICSEA	Index of Community Socio-Educational Advantage
HSC	Higher School Certificate
NAPLAN	National Assessment Program – Literacy and Numeracy
NSW	New South Wales (Western Sydney Region Network)
NSWSPC	New South Wales Secondary Principals' Council
SRC	Student Representative Council
STEAM	Science Technology Engineering Arts and Mathematics
Vic	Victoria (Victorian Network)
VASSP	Victorian Association of State Secondary Principals

Terms

Capabilities refer to the set of knowledge, skills, dispositions and behaviours that students acquire through schooling opportunities, and in tandem with key learning areas, to live and work successfully in the 21st century (ACARA 2017). 'Critical and Creative Thinking' and 'Personal and Social Capability' are examples of key capabilities in Australian and Victorian curricula. The New South Wales Education Standards Authority has mandated the explicit teaching of enterprise skills and capabilities. This exploratory research asked participants what suite of capabilities students were developing through *The Paradigm Shifters: Entrepreneurial Learning in Schools* initiative. Based on the scholarly work of Yong Zhao (2012, 2016), the research focused especially on students' development of an entrepreneurial-minded disposition. **Dispositions** refer to a person's inclination to think and act in particular ways. In the literature, they are often described as 'qualities' or 'habits of mind', and can be cultivated (Lucas, Claxton & Spencer 2013). They are skills that people are inclined to act upon – for example, while critical and creative thinking is a key capability, an inclination to think creatively and actively think about one's thinking is a disposition. Education has a key role to play "to help young people become ready and willing to make use of their abilities" (Lucas et al. 2013a, p. 9).

Creative thinking is the process by which we generate fresh ideas. It involves making connections across topics, concepts, disciplines and methodologies (Lucas & Spencer 2017).

Curiosity is a habit of mind that drives teachers and students to enhance their knowledge, to want to solve problems, and to learn and explore. This, in turn, requires that they seek agency and develop self-efficacy (Ainley 1987). A person can be born curious and can develop and strengthen his or her inclination to be curious through learning new ways of thinking in a supportive school environment (Munro 2015).

Design thinking is a methodology comprising distinct phases and divergent and convergent processes within these. It is intended to cultivate and develop creativity and innovation: Discovery (starting with people – empathy through research); Interpretation (ideation – coming up with ideas); Experimentation (prototyping and validation); and Evolution (evolving an idea that has been tried) (Riverdale Country School & IDEO 2013).

Entrepreneurial-minded is a disposition to think and act entrepreneurially, defined in this initiative as learners whose curiosity leads them to seek out and identify or solve problems that are worth solving. They look at problems as opportunities, rather than as dead ends. They apply their creativity and talents to develop innovative ideas and solutions. They care about the quality of what they produce, embracing mistakes as markers for learning and improvement. They are energised by the potential benefits to others, locally or globally, from what they do and produce.

Entrepreneurial learning often uses project and product-oriented learning as a pedagogical strategy. Teaching entrepreneurial education is often viewed as either the teaching about 'it' (content based), 'for it' (prepare for future entrepreneurs), or as an approach through 'it' (process driven) (Dijk & Mensch 2015). Distinct features of entrepreneurial learning include identifying and investigating real world problems and opportunities; creating authentic artefacts (products or services) of value to others; working in teams; and iterative experimentation over an extended period of time (Lackéus 2015).

Growth mindset is the belief that you can learn, apply and continue to develop and enhance your knowledge and skills. Rather than being fixed, qualities and capabilities can be built and expanded upon through effort, trying new things and

experience. Setbacks are seen as opportunities for continued learning and growth. Those with a growth mindset want to learn about themselves, the community and the world around them (Dweck 2000).

Personalised learning is the opportunity for students to take control of their learning experience toward the development of skills to direct and advocate for their own education. Personalised learning is distinct from other related terms, such as 'differentiated' and 'individualised' learning, because personalised learning is student (i.e. learner) centred, with students as active participants and 'designers' or 'co-designers' of their learning, and able to demonstrate and assess their learning. In differentiated and individualised learning, teachers are the designers of the instruction, monitoring and assessment of student learning (Zhao 2016).

Product-oriented learning (POL) stems from project-based learning or problem-based learning (PBL), but it differs significantly from how PBL has been practiced in most settings. The differences occur in the following five ways: (1) developing the entrepreneurial mindset vs. mastery of content; (2) initiated by student vs. initiated by teacher; (3) strength based vs. deficit driven; (4) quality of final product; and (5) use of final product (Zhao 2016, pp. 8-9). The resulting 'products' are often designed for, and consumed by, an authentic audience beyond the school.

Prototype/typing is a method that informs the design process and innovation, it "seeks out, develops and tests novel solutions to problems" (AITSL 2014, p. 2). The term is most frequently used in design, the sciences and computer programming. A prototype, or early working model, helps to generate and improve ideas through testing what works before implementation. While prototyping occurs at the onset of innovation, a pilot is the outcome of the innovation process. It is about scaling the learning from innovations (Gardner n.d.). Prototyping in an education context may include experimentation with new approaches to teaching and learning, school environments, relationships and communications, to enhance student learning (AITSL 2014; Zhao 2016).

Signature pedagogies are the "teaching and learning methods which are most likely to lead to the desired capability" (Lucas & Spencer 2017, p. 7). They are the types of teaching that best match the cultivation, for example, of students' critical and creative thinking, creativity or collaboration. Lee Shulman (2005) developed this concept from his notable work on preparing learners for vocational pathways and professional environments.

Student participation as a precursor to student activism and advocacy occurs when each student is listened to, is supported in expressing their views, and their views are taken into account. They feel like they have a genuine stake in decision-making processes. They are involved as co-designers of processes and in the actual act of making decisions. They share power and responsibility for decision-making around their entrepreneurial opportunities, experiences and services or products. Adults play important roles in scaffolding and supporting this type of student participation by creating openings and new opportunities with and for students (Shier 2015 and *The Paradigm Shifters: Entrepreneurial Learning in Schools* initiative's definition).

Executive Summary

Entrepreneurial learning is an emerging way of responding to the growing need to enhance student capabilities to apply knowledge in sophisticated ways, to deepen student engagement and to cultivate the mindsets to position students for success.

This report sets out the key findings from research on *The Paradigm Shifters: Entrepreneurial Learning in Schools* initiative ('the initiative'), a collaboration between Mitchell Institute, the Victorian Association of State Secondary Principals (VASSSP), the New South Wales Secondary Principals' Council (NSWSPC), and 21 government secondary schools in New South Wales and Victoria.

Context

Australian schooling needs a paradigm shift. With globalisation and technology transforming the world, mastery of knowledge and test-taking skills are no longer enough to succeed (Zhao 2012). The demand for graduates with capabilities such as creativity, critical thinking and advanced problem-solving, collaboration and communication skills, is unprecedented and continuing to grow (Foundation for Young Australians 2016; World Economic Forum 2016; OECD 2016).

> "To succeed in this ever-changing world, students need to be able to think like entrepreneurs: resourceful, flexible, creative, and global."
>
> **ZHAO 2012**

While some leave school early to undertake apprenticeships and traineeships, 12 per cent of young people leave and never go on to complete Year 12 or gain an equivalent qualification. This has profoundly negative impacts on these young people, and costs the country billions (Lamb & Huo 2017). Among those young people who do complete Year 12, many thousands do not go on to obtain higher qualifications, or they remain disengaged from the workforce for most of their lives. Their potential is unfulfilled.

Some Australian secondary students are academically successful and cooperative but are "quietly disengaged" in learning and are not reaching their full potential. One longitudinal study estimated that 40 per cent of students were disengaged in a given year, with half of those students quietly disengaged and performing only slightly better than the most disengaged group (Angus, McDonald, Ormond, Rybarcyk, Taylor & Winterton 2013).

Global and digital transformations are creating both challenges and opportunities for changing the way we learn, and creating new possibilities for students. As the research in this report illustrates, many Australian schools are already adapting approaches to education to ensure that all young people acquire the knowledge, skills and capabilities they need to thrive in complex education and employment settings. But 'what' and 'how' to change is still unclear and contested at a national and systems level. There is also a tension between what is mandated by government, what has worked in the past and what is needed now.

Entrepreneurial learning is a way of grouping skills and capabilities to position secondary students for success. It aims to cultivate mindsets and capabilities needed to identify and respond to new opportunities and problems, through creating artefacts for authentic audiences, real-world learning and iterative experimentation (Lackéus 2015).

Research highlights the importance of cultivating mindsets for enhancing student learning and growth (Mourshed, Krawitz & Dorn 2017). Entrepreneurial-minded learners apply their curiosity and talents to identify and solve problems worth solving by creating products (goods or services) of value to others, and embracing mistakes as markers for success.

Entrepreneurial learning programs from preschool to PhD levels have been increasing around the world for decades, particularly in the last ten years and in higher education institutions (Lackéus 2015). However, there is an opportunity to gain a deeper understanding of entrepreneurial learning's impact and relevance for Australian secondary school students and systems.

The initiative's collaborative foundations

In 2016, Mitchell Institute, VASSP, and NSWSPC decided to collaborate to pursue new ways to improve schooling and to develop young people who are more entrepreneurial-minded. The collaboration sprang from the work and advocacy of international scholar, Professor Yong Zhao.

Twenty-one government secondary schools joined this initiative which ran from May 2016 to May 2017. They committed to create the conditions, or extend what they already had in place, to develop young people who are more entrepreneurial-minded, by applying three principles in their local contexts:

- Develop more personalised education experiences, so each person can pursue passions and talents to excel in unique ways.
- Engage in creative and entrepreneurial product-oriented learning experiences that can, in authentic ways, benefit local and global communities.
- Cultivate and prototype new approaches, processes and or products.

Taken together, these principles point to what Yong Zhao argues will bring about a paradigm shift in schooling, better suited for the times, with students as creators and co-creators of their futures.

Students were active partners in the initiative. They were given the opportunity to be in the 'driving seat', pursuing their strengths and passions, identifying and solving problems worth solving or of value to others, and developing real-world products. The schools and students came from all socio-economic backgrounds and a wide variety of geographical contexts. Some schools reported that their students were academically successful and engaged, while others that their students were academically successful, but quietly disengaged, or even at risk of leaving school early.

The schools contributed funding towards their participation in the initiative and accessed support and mentoring from their membership of a state-based network. This included access to a network coordinator and participation in regular professional learning workshops attended by students, teachers and often school leaders.

Four distinctive elements of the initiative:

- **The collaboration**
- **Voluntary networked learning**
- **Students as active contributors -** every network learning workshop for and with students *and* teachers
- **Adaptive** - principles, rather than a fixed program, guided school actions and decisions

The research: aims, questions, participants and methods

An exploratory research project ran alongside the initiative, iteratively informing development activities and learning. The research sought to identify and understand what conditions help, limit or prevent developing entrepreneurial-minded young people; and increasing students' participation and engagement as valued contributors and decision-makers in their education (i.e. improving student self-efficacy and agency).

Nineteen of the 21 schools in the initiative accepted the invitation to participate in the research (10 in NSW and 9 in Victoria). There were four different groups of research participants: students, teachers, school leaders, and network coordinators (both former principals). The students and teachers interviewed were those best-placed to comment, as they were in the school's core group or 'action team', with the teacher member(s) also responsible for coordinating the school's involvement.

Data were collected using three methods: interviews; two short questionnaires (one for teachers and one for students); and a documentary analyses of 'artefacts'. Data were cross-referenced and qualitative in nature, providing insight into the different ways in which schools' starting points, contexts and strategic priorities influenced their decisions on why and how to participate in this initiative as part of a learning network, as well as their interpretation and implementation of the three guiding principles.

Key findings

The research suggests that school context is important. The school's culture, structures and processes, and resourcing opportunities and constraints influenced the extent to which schools could embrace and provide students with entrepreneurial learning opportunities.

The research suggests that entrepreneurial learning:

- **Is adaptive**: Through personalised and product-oriented learning, entrepreneurial learning can be pursued in many ways, and can be developed or adapted to fit local contexts, needs, strategic priorities and different student cohorts.
- **Provides a new way of approaching schooling:** The term 'entrepreneurial-minded' provided the partners and schools with a new way of approaching schooling and of grouping skills and capabilities, many of which were already advancing in their organisations.
- **Enhances and supports the development of student capabilities:** Personalised and product-oriented learning can help students develop and enhance vital capabilities and mindsets, and deepen student engagement. (See the breakout box on student reported benefits and outcomes, overleaf).
- **Supports the reframing of student-teacher relationships**: Adults play a critical role in accelerating entrepreneurial-mindedness and scaffolding student learning, but in a reframed relationship where learning is no longer teacher-dependent but teacher-enabled. The level of scaffolding (including the use of different strategies), and the nature of mentoring is personalised for each student. This maximises the development of agency, dispositions and skills through the provision of a greater number of opportunities relative to student and group starting points.

Factors that support schools to embrace entrepreneurial learning:

- **Network structure:** The network structure accelerated entrepreneurial-mindedness and 'agency thinking'. This was achieved by exposing students and teachers to other schooling practices and ideas, which affirmed, supported and challenged them.
- **Leadership culture**: A school leadership culture that supports experimentation and an openness to learning from mistakes is important.
- **Teacher dispositions**: Schools need teachers with the disposition and capabilities to enable and support entrepreneurial learning – guiding and scaffolding, rather than directing– to build student skills and confidence. Many teachers reported they developed a more expansive view of different approaches to schooling and understood the open-minded disposition needed for this type of teaching, although many found this challenging to implement in practice. Many described pivotal moments where they were led to rethink

their role and think about how best to enable students to 'succeed', such as when seeing visible progress in student-led pursuits.

- **Student dispositions:** Students who are curious and interested, and who care enough to respond to an issue or opportunity.

Factors that get in the way of embracing entrepreneurial learning:

- **Time and multiple priorities**: Competing demands on time and from other parts of school can add to the pressure of embracing a new approach. A number of teachers made suggestions for more support for teachers, either via experts, or helping shift 'mindsets' towards more creative and collaborative practices, as well as having dedicated time for forward planning to embed entrepreneurial learning.
- **Teacher behaviours**: Teacher behaviours that discourage agency, such as dominating conversations or not opening up opportunities for students to "step up", can impede the adoption of entrepreneurial learning.
- **Student dispositions**: Students' negative emotions, such as fear of failure, can also impede adoption.

Student reported benefits:

- Learning new knowledge and skills
- Learning new ways to work and learn

Student reported outcomes:

- Enhanced entrepreneurial-mindedness and capacity
- Increased confidence
- A more resilient approach to learning
- Improved relationships with teachers
- Improved collaborative capacity
- Improved empathy
- A more positive view of school
- Enhanced learning transfer
- More and diverse connections
- Improved agency

"The biggest surprise for me is how much the perspective, the total atmosphere had changed [as part of this initiative] … Students were so involved, they were enthusiastic and enjoying it."

STUDENT, F, VIC

Scaling the learning

This research contributes to filling a knowledge gap that exists in developing entrepreneurial-minded young people. The findings inform what can happen at the school and system level to promote and develop entrepreneurial learning and student participation. This will better position students for success.

The research highlights that students need multiple and diverse opportunities and role modelling to help them become entrepreneurial-minded. It also suggests the initiative's three guiding principles can be adopted by any student, regardless of their background, abilities and learning needs. Teachers recognised, however, that some of their students did, or would, struggle with entrepreneurial learning. In these cases, teachers suggested focusing on student abilities to, for example, self-direct and self-regulate earlier in their schooling.

The findings from this research and the broader literature on entrepreneurial education, student engagement and related programs, suggest schools could consider a range of ways to pursue and embed entrepreneurial learning, and to enhance student participation and engagement.

Schools could do this by:

- Prioritising and creating opportunities for students to lead their learning, and to develop authentic products of value to others.
- Ensuring teachers are equipped to support students' entrepreneurial learning, choosing the types of teaching that best match and enable students to develop an entrepreneurial mindset.
- Creating opportunities for students and teachers to learn with each other, including time, funding and other resources to effectively plan and collaborate.
- Creating and joining learning networks based on interest and need, and forming strategic partnerships between schools and with not-for-profits to drive change.
- Promoting the benefits and value of entrepreneurial learning, risk-taking and innovation to position students for success.

Governments, the community and industry can listen to young people in secondary schools and help create the conditions for innovation and system reform by working together to build and improve entrepreneurial education, and expand its reach.

Systems could do this by:

- Recognising schools as system changers, as well as acknowledging the important role of strategic partnerships between schools and not-for-profits, and voluntary, school-led networks in driving change.
- Explicitly recognising and valuing that schools are already finding multiple and diverse opportunities to create the time and space for entrepreneurial learning.
- Supporting schools that use their flexibility, local knowledge and partnerships to pursue innovations with a promising evidence-base, in a way that best fits and meets school needs, strategic objectives and contexts. Through recognition and incentives, for example, systems could help create the conditions for schools to be entrepreneurial by enabling diversity and choice around learning networks, rather than mandating approaches that may limit opportunities for schools to pursue strategic partnerships and learning based on evidence of interest and need.
- Acknowledging a broader range of data sets than is currently used to show the impact of learning, such as through developing assessments that measure the growth of students in areas beyond NAPLAN. Systems could also work with schools to develop case studies and tools, such as assessment rubrics for product-oriented learning and, in doing so, identify how schools are developing students' entrepreneurial-minded dispositions and cultivating capabilities such as critical and creative thinking.
- Enabling schools, through additional funding and support, to document and share good practice to inform the teaching of entrepreneurial learning in schools and to enhance student agency.

Potential future research

Given that entrepreneurial learning appears to be a promising approach to schooling, and a signature pedagogy or method to enhance student capabilities, it is important to strengthen the research and evaluation knowledge base in Australia around entrepreneurial learning in schools. The following areas of potential future research would enhance our understanding:

- By specifying further how schools cultivate the dispositions considered crucial for entrepreneurial learning, as well as the skillset teachers need to teach product-oriented learning. This research indicates that many teachers are learners too, when it comes to developing students' entrepreneurial-mindedness through entrepreneurial learning.
- By identifying the potential implications of a product-oriented learning approach for initial and ongoing teacher education in Australia. Some teachers in this research noted this was a gap in their pre-service education.
- By identifying the feasibility of entrepreneurial learning in different contexts with larger and diverse cohorts of students. While the research presented in this report is detailed, it is not generalisable.
- By gathering further evidence of how students and teachers are assessing the outcomes of entrepreneurial learning, and the longer-term impacts of this approach for students; and in doing so, provide practical advice to schools to assist them in deciding how this approach could be part of their pedagogical 'toolkit'.

1. Introduction

This report presents the background, design and findings from an innovative initiative called *The Paradigm Shifters: Entrepreneurial Learning in Schools* ('the initiative'). This initiative emerged from a partnership between the Mitchell Institute, two state principals' associations and a leading educational scholar, in response to shared concerns about the Australian education system's ability to set all students up for success in school and beyond.

> "… we want to make education better for students, but if students can't raise their voice up, then it defeats the purpose, in a way."
>
> **STUDENT, F, NSW**

The report opens with a discussion of the collaborative work of the partners, explaining how this provided an innovative foundation for the initiative. This background section also presents an overview of the initiative's design.

Next, the report contextualises the initiative in the broader literature and landscape of entrepreneurial education, student engagement and other related developments. It draws together evidence from around the world to identify emerging patterns and develop understandings about the essential requirement of student and school voices in shaping successful entrepreneurial education. This frames how entrepreneurial education is understood and applied, and to what end. It underpins the key themes, in theory and practice, from which the initiative's beginnings, research and design emanated.

The report then presents findings from the research project that accompanied the initiative, beginning with contextual information on school settings, motivations for joining, and selection processes for student and teacher members of the school action teams. Next, it presents the findings from student, teacher and principal participant groups, with the perspectives of the network coordinators involved in the initiative integrated throughout. This is followed by a section on the views of participants on their next steps in relation to the initiative.

Drawing on insights from the findings, the report proceeds with a discussion of the similarities and differences across the different groups, and a discussion of design features from the initiative that worked, what were challenges and how these were overcome.

The conclusion presents the answers to the research questions, summarising the key benefits for students, and shifts for students and schools that resulted from, or were likely influenced by, the initiative.

This report is intended to encourage, inform and enable schools and systems considering ways to boost student voice and choice, cultivate entrepreneurial-mindedness and deepen student participation, and the powerful roles of students, and of networks of like-minded schools, in driving this transformation.

2. The collaborative foundation and design of the initiative

This section explains why the foundations and approach to the initiative were collaborative and innovative. It outlines the strategic partnership and context for understanding the research findings and insights presented later in the report. This discussion covers the initiative's international scholarly origins through to its distinct partnership features and implementation 'on the ground'. It draws on an analysis of documents, including records of email exchanges (prior to and as the initiative 'officially' began), the partnering organisations' jointly written Memorandum of Understanding (MOU), partner meeting minutes, communications (partner newsletters and reports), as well as references to the wider research literature.

> "To succeed in this ever-changing world, students need to be able to think like entrepreneurs: resourceful, flexible, creative, and global."
>
> **ZHAO 2012**

Establishing the collaboration

The collaborative approach chosen for the initiative sprang from the work and advocacy of international scholar, Yong Zhao, fostered by his relationship with Mitchell Institute as a Professorial Fellow and advisor. Yong's work as an academic and adviser was integral to decision-making about the focus and choices made by the partners (listed at the front of this report) at a network-wide level. Their choices then influenced the approaches selected in each of the participating schools and in each state's local school-to-school network.

The connection with Yong dovetailed in 2015 with Mitchell's existing and emerging relationships and its direct collaborative work with schools. The Mitchell Institute had already strategically connected with two major principal organisations (the Victorian Association of State Secondary Principals [VASSP] and the New South Wales Secondary Principals' Council [NSWSPC]) through previous active involvements. These relationships and shared approaches revealed a story of deeply held collective values centred on improvement and innovation.

After much discussion with Yong Zhao, the VASSP, the NSWSPC, and the Mitchell Institute agreed to collaborate to pursue innovative approaches to schooling. A dialogue ensued, developing ideas, research questions and feedback loops to ensure all engaged in the conversation.

The partners created an MOU, emphasising the shared values of the collaborators: "young people today need to develop their creative, innovative and entrepreneurial capabilities and perspectives as globally-minded citizens and world class learners" (Mitchell Institute, VASSP & NSWSPC 2016).

The work of Yong Zhao and the need for a paradigm shift

As indicated above, the initiative was inspired by Yong Zhao, who became a critical mentor throughout.

Much of Yong's research concludes that students are getting the wrong education (Zhao 2012). He argues against education systems that continue to be geared toward a single score and traditional pathways, with students as education recipients. Instead, he contends, today's students need to be active participants in their learning and

educated for today's world. Globalisation, the complexity of problems (social, environmental, economic, and youth unemployment), demographic trends and the volume and speed of technological changes present new and unknown challenges and opportunities. Yong advocates encouraging students in their creativity and allowing them to explore opportunities that affect more than just themselves. While there is no single path to this end, Yong's work asserts the need for a paradigm shift in education to cultivate more entrepreneurial-minded learners.

Within this context, and informed largely by Yong's work in *World Class Learners – Educating creative and entrepreneurial students* (Zhao 2012), three principles guided the focus and approach of the initiative:

- Develop more personalised education experiences, so each person can pursue passions and talents to excel in unique ways.
- Engage in creative and entrepreneurial product-oriented learning experiences that can, in authentic ways, benefit local and global communities.
- Cultivate and prototype new approaches, processes and/or products.

The term 'entrepreneurial-minded' provided the partners and schools with a new way of approaching schooling and of grouping skills and capabilities, many of which were already advancing in their organisations (e.g. the Creativity Wheel in Rooty Hill High School). Developing entrepreneurial-minded young people and increasing their participation as valued contributors and decision-makers in their education and engagement (i.e. improving student self-efficacy and agency) became a central focus for the initiative (and the research that underpinned it).

Drawing on Yong Zhao's work, the authors of this report considered the entrepreneurial-minded disposition to belong to those individuals or groups whose,

> … curiosity leads them to seek out and identify or solve problems that are worth solving. They look at problems as opportunities, rather than as dead ends. They apply their creativity and talents to develop innovative ideas and solutions. They care about the quality of what they produce, embracing mistakes as markers for learning and improvement. They are energised by the potential benefits to others, locally or globally, from what they do and produce. (Mitchell Institute, VASSP & NSWSPC 2016)

The underlying emphasis in this initiative, in terms of what school action teams would do to implement the three principles, was to create value for others:

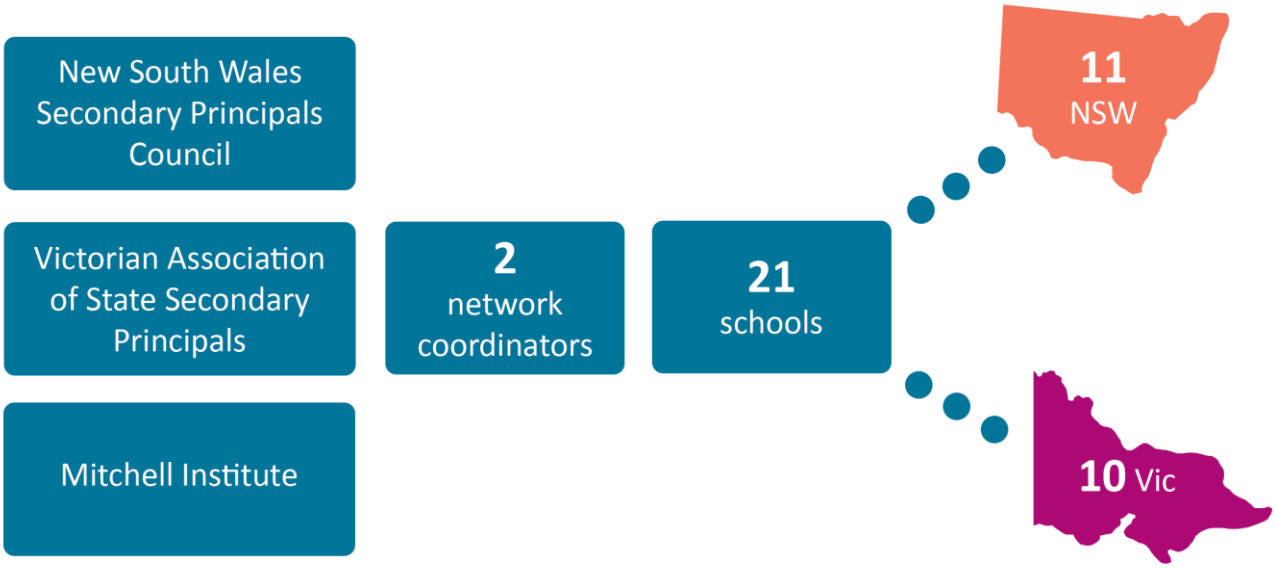
> We need to create opportunities for children to exercise their creativity, to refine their creativity, by creating things that matter to other people to make lives better for others, to better the world, to pursue a purpose bigger than themselves. (Zhao in Richardson, Henriksen & Mishra 2017, n.p.)

Together, guided by this notion, the partnership and principles set the stage for innovation.

Who was involved?

In early 2016, the three partners advertised and hosted information sessions on the proposed initiative for principals of government secondary schools in New South Wales and in Victoria. Fifty schools initially submitted expressions of interest. From these schools, twenty-one then self-selected to join the initiative and provide funds to support their participation. This led to two networks: 11 schools from the New South Wales network in Western Sydney and 10 schools from rural and metropolitan Victoria. A network coordinator supported each network through mentoring and coordinating peer-to-peer learning. (See Figure 1).

Figure 1: The initiative's operation



The schools and students came from all socio-economic backgrounds and geographical contexts, and school enrolments ranged from 200 to 1,400 students. About half of the schools in the NSW network and a third of the schools in the Victorian network had ICSEA values below 1,000, indicating lower levels of educational advantage in the school community. The schools were at different starting points and stages coming into the initiative - some were taking their first tentative steps towards transformation and innovation, while others were seeking to refine and enhance existing school-wide approaches.

The network models in each state emerged from each network's distinct context. They varied in several key ways.

In NSW, the network coordinator model arose from a network nomination. Two schools within the network approved the appointment, funding the release of a retired principal who was already working in each of the schools. A lead school provided additional administrative support on behalf of the network and acting as 'host' venue for all NSW network gatherings, typically involving around 100 people.

In Victoria, VASSP selected the Victorian network coordinator using their knowledge and network capabilities. Geographically, the schools in the Victorian network came from both rural and metropolitan contexts and different schools hosted the meetings. Partners believed that visits to other schools would, in themselves, potentially offer an opportunity to see first-hand how school teams were selecting and applying the initiative principles.

Network coordinators provided continuity as points of contact and support for the schools and partner organisations. Each network coordinator established a mutually suitable suite of methods and forms of support with the schools (e.g. for the most part, this involved regular email communications, follow-up phone calls and, as relevant and mutually suitable, face-to-face catch-ups with members of the school's initiative). The coordinators participated in each partner meeting and were key contributors to the design and development of network and initiative-wide communications and workshops. They set deadlines for the school action teams, 'nudging' them to act (not just talk or plan to act) and assisted them in making their progress visible. This was not a transactional role; it was a pedagogical and leadership role within the initiative. Both the network coordinators were aptly suited to the position, as experienced educators and immediate past government secondary principals. Both engaged in school activities, coaching and mentoring around curriculum and leadership. This brought additional direct and current knowledge and expertise in schooling to the initiative. The network coordinators were also both known to many of the schools in their respective networks prior to the initiative's commencement.

How the initiative progressed

The initiative ran from May 2016 to May 2017, involving a suite of people, processes and products (see the timeline of developments, Appendix 1).

Students identified an issue or problem that they cared enough about to do something. They then formed school action teams with their teachers to investigate and co-design responses, and bring the three guiding principles to life. The sorts of issues they focused on included lack of school spirit, addressing a local community social need and opportunities such as rethinking work experience or assessment for students. Over the 12 months of the initiative, or in a concentrated period within it, school teams set in motion different actions to research and develop innovative solutions to address the issue. The solution was their 'product'. Throughout the initiative, students could experiment with different 'prototypes', sharing these with other students and schools at school-based and network-wide workshop learning days. (See Section 6: Student findings)

Workshop gatherings, often aligning with visits by Yong Zhao, were learning spaces to generate ideas, 'test' them with peers, and if needed, change direction. Dominating the workshops was the physical presence and voice of students.

Together with their teachers and, in a number of cases, school leaders, students were active participants in every forum, usually held once a term. Yong's commentary and energy were sources of encouragement and provocation. At the network sessions and in-between, the network coordinators facilitated connections via personalised Skype sessions between Yong and the school teams.

Each student team produced a video and poster of their entrepreneurial learning journey for sharing at a 2017 whole of network learning showcase and celebration forum in Melbourne, hosted by the Origin Foundation. Over 150 school students, staff and partners attended, along with Yong Zhao and guest keynote speaker Bevan Slattery, a top Australian tech entrepreneur. Other guests came from academia, government, philanthropy, not-for-profit and business sectors.

The innovative nature of the approach

The very formation of the initiative, as well as the initiative itself, point to four distinct innovative features that are worthy of discussion.

The collaboration: Commentators argue that what is good for collaboration is also good for innovation (Richardson 2011). The shared values, relationships and processes of two state principal organisations, together with a national policy institute, created and sustained the initiative. This created an 'inside out' rather than 'outside top-down' structure, with network-wide governance and support. Previous Mitchell Institute analysis of three school systems found that collaboration is often a missing ingredient in education system design, and should be an "overwhelming strategic priority" applied simultaneously at all levels, inclusive of teachers and students in their local communities (Bentley & Cazaly 2015, p. 7). The partners laid the crucial groundwork for the collaborative work to happen and to purposefully foster a collaborative mindset for the approach. A mounting body of evidence from around the world and from within and outside education suggests that such collaborations offer promise for innovation. The best systems are those that create the conditions for innovation alongside system reform (Barber, Donnelly & Rizvi 2012). Matthew Taylor from the Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA) asserts, "The stretch target for policy is innovation; creating the confidence to try things out and the culture and systems which mean failure can be tolerated and learnt from quickly" (Taylor 2017, n.p.).

Voluntary networked learning: Another feature of the initiative was its socially inclusive and voluntary nature. The partners sent invitations to all schools in the VASSP and NSWSPC networks, resulting in the collaboration of a diversity of schools with different socio-economic backgrounds and geographic contexts. Networks are not, in and of themselves, unique. The idea of voluntary networks and processes is not foreign to education, but governments tend to create these networks on geographic bases or via specific group 'labelling' (e.g. networks of disadvantaged schools). By contrast, this collaboration began at the school level, with inclusive processes and partnerships, a marked divergence from typical approaches taken by education system authorities.

Some studies and commenters on innovation argue that those who discover unique ways to look at and overcome difficulties, and see solutions where others do not, are those who spread and sustain needed change (Pascale, Sternin & Sternin 2010; Grant 2017). On spreading innovation, Margaret Wheatley's research concludes there is a need to understand networks as the first stage in emergence, and emergence begins as local actions that spring up simultaneously in many different areas. Fostering critical connections is 'the work', via "discovering pioneering efforts and naming them as such. We then connect these efforts to other similar work globally" (Wheatley & Frieze 2009, p. 3).

School-led with students as active contributors: The school action teams were explicitly inclusive of students; their contributions and those of their teachers aligned. This practice continued throughout the initiative, with every network gathering having the presence and voice of students 'front and centre'. From the first networked-learning forum, students and teachers, and, in many cases, the principal or deputy/assistant principal, attended. In Victoria, schools were encouraged to bring students along. In Western Sydney, schools were expected to bring students along. The first networked-learning forum in Victoria had about four students; Western Sydney had about 30 students. The visible impact of the student presence was strong, with Yong Zhao using the opportunity to engage directly with the students, and to model ways of questioning and engaging students' voices in the discussion about schooling. Both networks ended up with consistently large numbers of students at the networked-learning forums.

As two partners noted:

> ***"It was terrific to see the student work at the forum … It was also a highlight to see the students interacting across the two states – it is a rare opportunity for students to feel part of something as broad as this." (VASSP President, June 2017)***
>
> ***"When we see projects like this happen, it refocuses us and we realise the power of what students can actually do. It brings to life what can happen." (NSWSPC President, October 2017)***

Lorna Earl's (2006) evaluation of a large multi-year school-to-school voluntary networked learning program in England found pupils were one of the most involved groups in the networked learning communities. However, the evaluation found little indication that this involvement was more than superficial. It appeared that pupils attended network functions and showcased their work but there was little evidence of a fundamental shift in the nature of the relationship of schools with pupils or families. Earl and her colleagues concluded that, in the future, it is likely that fundamental shifts in the way schools operate to serve all pupils well will involve thinking about relationships and interactions *with* pupils and their families and the role they should play in implementing school reform. "In the final analysis", stated the authors, "nothing really changes for pupils unless there are changes in the hearts and minds of the adults in schools who work with them" (Earl, Katz, Elgie, Jaafar & Foster 2006, p. 9).

Adaptive: Principles, rather than a fixed program, guided the work of the initiative. This gave schools choice and flexibility. It gave the initiative the opportunity to support multiple ideas and approaches at once. Such features, note the Global Agenda Council on Education for the World Economic Forum (2016), are enablers for sparking innovation in education. More than this though was the iterative nature of the work, with much of this visible at network learning workshops as 'work in progress'. As more became known about the initiative's objectives and participants deepened their understanding of the three guiding principles, through network workshops and students' entrepreneurial learning pursuits, they changed or relinquished elements of the initiative. Sometimes ideas raised in discussions, such as creating network-wide student media teams, were tried but let go and learned from. According to Stanford researchers Seelos and Mair (2016), such practice reflects what effective innovators do; they remove uncertainty through habits such as creating and refining solutions.

The author of a unique study on why sporting clubs become super clubs (Andrews 2015) argued that such clubs do not just produce better versions of the same products (successful football teams). Instead, over time these clubs produce more complex, higher value, globally consumed products and, in the process, they accumulate new capabilities manifesting in new skills and access to people, capital, infrastructure and adaptive leadership. Studies of high

performing teams show that key to this are people feeling psychological safety “to take risks, voice opinions and ask judgement-free questions” (Schneider 2017).

Working within that ethos and its distinct design features, this initiative evolved from partners coming together with a desire not just to act, but to act differently.

3. Entrepreneurial education

This section considers why entrepreneurial education is important for young people, for individual economies and for the global economy. It then considers what is currently happening in schools to enhance student choice and voice, defines key terms, and describes some of the programs and research within this domain. Suggestions for next steps conclude this section.

Entrepreneurial citizens for the times

Entrepreneurship emerged over the last two decades as arguably the most potent economic force the world has ever experienced (Kuratko 2005). In present times, entrepreneurship, with its focus on innovation, has become an attractive strategy for growing youth employment (Moberg et al. 2014b; Headley & Moffatt 2015; OECD 2016; United Nations Conference on Trade and Development 2015).

Demographic and economic trends including youth unemployment and underemployment are raising entrepreneurship to the centre of global policy discussions (United Nations Conference on Trade and Development 2015). A favourable cultural norm towards entrepreneurialism plays a central role in supporting and encouraging the development of entrepreneurial-minded citizens (Rantanen, Pawlak & Toikko 2015). Australia's universities have been quick to recognise this change, with a rapid increase in the provision of entrepreneurial courses. In 2014, 95 per cent of Australian universities were offering courses in entrepreneurship or small-business (Featherstone 2015). A decade earlier, entrepreneurship was a 'niche' field, with only a handful of universities with any such offerings (Featherstone 2015). Now, entrepreneurship education is one of the fastest growing fields in universities in Australia globally (Maritz et al. 2016; Sirelkhatim, Gangi & Nisar 2015; Spike Innovation 2015).

This shift may reflect what the United Nations has observed about how young people view their job prospects:

> ***"Many young people themselves have become more realistic about their job prospects in an uncertain economy and are starting their own enterprises." (Department of Economic and Social Affairs of the United Nations Secretariat 2016, p. 34)***

The European Commission 'New Skills Agenda' for Europe now defines entrepreneurship as a transversal key competence across all spheres of life, encompassing knowledge, skills and attitudes (Bacigalupo, Kampylis, Punie, Van den Brande 2016). This agenda views entrepreneurship as applying to all spheres of life: personal, civil society and the world of work. Under this definition of entrepreneurship, the value created from such entrepreneurial pursuits may be cultural, social or economic.

Many academics and policy leaders argue that it is highly likely that academic prowess will be but one part of young people's broader portfolio of essential skills, capabilities and dispositions for a lifetime of learning (Claxton & Lucas 2015; World Economic Forum 2015). Growing evidence from around the world asserts that 'non-cognitive skills' are at least as important, if not more so, than 'cognitive skills' in predicting 'success' (Levin 2012, Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson & Beecham 2012). Communication and problem-solving skills, and capabilities like critical and creative thinking and collaboration have always been important, but the evidence suggests they are even more important now.

The Foundation for Young Australian's (FYA) 'New Work Order' series responds to these developments, making the case that young people will need particular entrepreneurial-minded dispositions, skills and capabilities to succeed. FYA defines these as the transferable enterprising skills of problem-solving, critical thinking, creativity, communications, teamwork, presentation skills, and financial and digital literacy (FYA 2017). FYA research found that young people are likely to work in more jobs and careers than in the past and many will need to be more entrepreneurial than ever before. FYA claims enterprise skills will become the 'new basics'.

There are decreasing numbers and lower proportions of low-skilled or routine jobs across many industries (World Economic Forum 2016). In contrast, jobs requiring non-routine cognitive skills are on the rise (Heath 2016, World Economic Forum 2016). Frey and Osborne (2013) examined how susceptible jobs are to computerisation. Their findings suggest that while technology continues to "race ahead", "for workers to win the race, however, they will have to acquire creative and social skills" (p. 45). Tony Wagner (2012; 2014; 2016) calls these skills the sorts of skills students need now for careers, continuous learning and citizenship. These he calls the seven survival skills: critical and creative problem-solving; collaboration across networks and leading by influence; agility and adaptability; initiative and entrepreneurship; accessing and analysing information; effective oral and written communication; and curiosity and imagination. These will be needed along with core skills in English, Mathematics, Science and other disciplines (Levin 2012). These calls align with those made by the World Economic Forum (2015), the OECD (2016) and employer groups (CBI 2012; BCA 2017).

Technology is reshaping workplace flexibility by growing the sharing and on-demand economy. The rise of automation is also estimated to affect up to 40 per cent of jobs (FYA 2017). For the first time too, Australian workplaces may have five generations working together due to such changes as the age of retirement and increasing life expectancy (White 2016). The world of work too is becoming more personalised and globalised than ever before.

These changes have contributed to the growing calls by scholars, employers and young people themselves for new approaches to schooling (Zhao 2012, 2017; FYA 2017; Department of Economic and Social Affairs of the United Nations Secretariat 2016).

Why a new approach is needed

Education is founded on a vision for what young people need to learn (Claxton & Lucas 2015). Schooling is a key part of where the vision for education comes to life.

Australia's current educational goals aim to promote equity and excellence for all young Australians to become successful learners, confident and creative individuals, and active and informed citizens (MCEETYA, 2008). These goals have stood the test of time.

However, evidence from around the world (and in the findings of this research) shows that what may have worked for schooling in the past is not always working now. Around one quarter of Australia's students today are not meeting key educational milestones at school entry, transition to secondary school, school completion or full engagement in work, training or education by the age of 24 (Lamb, Jackson, Walstab & Huo 2015). This has profoundly negative impacts on these young people and the society in which they live (Lamb & Huo 2017).

> "By age 24, 93,000 young Australians are not fully engaged in work or study."
>
> LAMB ET AL. 2015

Australian secondary school students would like the education system to be more engaging.. In a survey of over 4,000 Australian students, 34 per cent indicated that they would like a greater say and influence over what they learn and how (FYA 2013).

There is a need for new approaches to develop creative, confident and capable young people (Glover, Hinz & Ross 2014).

Change is already underway in schools

In Australia and around the world, there are already a growing number of programs and initiatives to make secondary education more engaging, relevant, experiential and personalised, and to enhance student agency to be entrepreneurial. These vary in: approach, who is leading the work, =priority cohorts, program design, duration and governance arrangements.

Many schools are leading the way in this area. Rooty Hill High School in Western Sydney has been recognised by *The Educator* (2017) for two years running as one of the 40 most innovative schools in Australia. Templestowe College in Victoria, whose pioneering approach to secondary education, based on students 'taking control' of their education, is attracting attention from educators, researchers and policymakers from around the world (Cook 2017a). St Paul's in Queensland, undertaking their 'Futures Planning Project', found that employment and technology disruptions were going to be the two key influences on students' future success. St Paul's concluded from their research (2015) that to meet these challenges and take advantage of opportunities in this new education landscape, learners are going to need to be capable in different ways to the past. Improving student knowledge alone will be insufficient to equip them for the future.

Programs such as Social Ventures Australia's Bright Spots are working in collaboration with schools to identify, sustain, develop and share the learning from the promising practices schools have developed. Hands-On-Learning and Big Picture are long-standing and evaluated programs of work explicitly targeting young people experiencing, or at risk of, disengagement (Deloitte Access Economics 2012; Hayes, Down, Talbot & Choules 2013; University of Melbourne 2016). Other programs, such as the FYA's $20 boss, are available to students of any background (FYA 2015).

Other for-purpose organisations have embarked on building a thriving rural Australia through igniting entrepreneurship in young people and their communities. For example, the Australian Centre for Rural Entrepreneurship (ACRE) has begun implementing, adapting and evaluating Scotland's evidenced-based Social Enterprise in Schools program in rural primary and secondary schools in Victoria, Australia (MacMillan 2015; Anderson & Beavis, 2017).

Philanthropic organisations are also active in this space, with funding and skilled volunteering support. For example, Kids in Philanthropy (KiP) (www.kip.org.au) has a sub-fund with Sydney's Community Foundation (www.sydneycommunityfoundation.org.au). KiP engages, educates and empowers children (5 to 15 years) and their families through hands-on experiences in 'the art and skill of giving' to assist in addressing significant disadvantage in Australian communities.

Australian curricula are also responding to the changing world. The Victorian and Australian curricula, for example, both set out the knowledge, skills, behaviours and dispositions that all students should acquire and apply during their schooling. These provide a framework for teachers to think about where they are at in terms of giving students the time and opportunity to develop vital capabilities like critical and creative thinking, ethical capability, intercultural understanding and personal and social capability. Teachers can use these frameworks to help plan lessons, scaffold learning, and to help assess where students are at in applying and demonstrating their learning. In NSW, schools are also required to teach enterprise skills and capabilities.

The Paradigm Shifters initiative sought to make a complementary addition to the work that is already being done. The initiative was especially focused on developing entrepreneurial-minded students. In practice this meant that students were supported to exercise their agency.

Student voice, agency and engagement

Curiosity is the engine that drives teachers and students towards solving problems, learning and exploring (Ainley 1987). This, in turn, requires that they seek agency and develop self-efficacy (a belief in one's ability and in one's agency; a belief that one can do a task). Sir Ken Robinson calls the development of a lifelong sense of curiosity "one of the greatest gifts that schools can give their students" (Robinson & Aronica 2015, p. 136). It is the forerunner to the visible manifestations of creativity and innovation.

Being entrepreneurial-minded may orient students towards being curious and becoming change makers, but the extent to which they believe they can affect change is critical to turning this orientation into action. Being entrepreneurial requires students to see themselves in a position to create change.

International studies in education have shown that the quality of the relationship between student and teacher is key to students' self-efficacy (Hattie 2008; Schleicher 2015). A program that focuses on student and teacher self-efficacy, and agency, means that relationships between teachers and students tend to shift as boundaries are redrawn around these roles (Bray & McClaskey 2017).

Increasingly, the notion that young people are merely 'adults in waiting' is being challenged. The authors of the United Nation's Youth Civic Engagement report suggest that, "there has essentially been a paradigm shift in how adult society views the role of young people—one that challenges age-old stereotypes of youth efficacy and commitment" (Department of Economic and Social Affairs of the United Nations Secretariat 2016, p. 15). And they put out a call to action for "societies that have traditionally viewed youth as 'adults in waiting' to be open to the engagement of young people as active contributors to social change" (p. 15).

Self-efficacy around educationally-related tasks in their schooling has an impact on students' confidence, enthusiasm, commitment and sense of value (Schleicher 2015). Levels of student self-efficacy around these types of tasks seem, in turn, to be associated with the self-efficacy levels of teachers. The higher a teacher's self-efficacy (related to the tasks of teaching), the higher their students' self-efficacy (related to their learning). An important element underpinning teacher self-efficacy is the extent to which they are able to exercise agency – participate in and create outcomes – around educationally-related decisions made within their schools. This, in turn, spills over into student achievement. Higher levels of self-efficacy are associated with higher levels of student achievement (Schleicher 2015). John Hattie's research (2008) also emphasises the importance of self-efficacy and agency, noting how achievement is positively associated with increased levels of self-regulation and personal control.

Student voice can be seen as an outcome or extension of student engagement, which can be enabled through deliberate and explicit student-centered approaches to schooling. These include cooperative learning, in which students work together in small groups to improve their own and each other's learning. This, in turn, is seen as a counter strategy to the competitive individualistic environment of schooling (Johnson & Johnson 2014).

Student engagement, or the degree of one's connection to learning and the learning environment, is complex and difficult to measure (AITSL n.da). Indicators include cognitive and non-cognitive elements, such as interest and motivation, student-teacher relationships, staying on task, and school attendance (Fredericks, Blumenfeld & Paris 2004; Centre for Education Statistics and Evaluation [CESE] 2017). Studies show a positive association between having some control over one's work, a sense of belonging or connectedness to school and the ability to pursue talents and interests, with higher rates of school completion and better education performance (Abbott-Chapman, Martin, Ollington, Venn, Dwyer & Gall 2013; OECD 2016).

A recent NSW study by the Centre for Education Statistics and Evaluation (2017) found that engaged students (as measured by positive behaviour, attendance and interest/motivation) gained up to half a year in learning (as indicated by NAPLAN results) when compared to less engaged students with the same background and prior achievement. Conversely, student disengagement is associated with a perceived lack of self-efficacy (students not believing they can do the work), negative attitudes towards school and student-teacher misunderstandings (Montuoro & Lewis 2015 p.56; Lingard et al. 2001).

Effective teaching practices, personalising learning and students having greater choice and agency over what they learn and how, can enhance student engagement (Walsh & Black 2009; AITSL n.db).

Yong Zhao's (2012) characterisation of a 'world class' school proposes that student voices will be evident, not only in the teaching and learning approaches of the school, but in its governance and environment (physical, social and cognitive). Yong offers several questions for practitioners to consider. These questions relate to the extent to which students in the school are involved in the development of rules and regulations; selecting and evaluating staff; and

decisions about such items as library books or other equipment. Suggestive of this change is the recent commitment in Victoria for every government secondary school to elect students to school council with full voting rights (Cook 2017b).

The issue of partnerships between youth and adults is the focus of work on children's participation rights by Harry Shier (2006) and his colleagues. Shier's work has been influential, notably leading to the development of the "Article 31 Children's Consultancy Scheme". This changed the relationship between children with adults, enabling them to act as consultants in the management of cultural institutions. From this experience, Shier developed the seminal 'Pathways to participation' planning and evaluation tool,[1] which has five levels of participation (the research team drew on this tool to identify agency thinking questions – see Appendix 2). The tool assists adults in identifying the extent to which they are *disposed* to including the voices of children and young people in decision-making. It also helps adults identify and enhance *opportunities* for student participation, and points to *policy obligations*, such as identifying gaps or limits to existing structures or processes.

Shier and his colleagues identified a spectrum of 'participation spaces', as follows:

1. Adult only spaces, where children and young people are excluded.
2. Adult-dominated spaces, where representatives of children and young people are invited to the table but treated tokenistically.
3. Spaces where there is genuine shared responsibility for deliberative decision-making between children and adults.
4. Children's spaces, which are organised and facilitated by adults.
5. Children's spaces, which are self-facilitating or autonomous, but are made viable by adult organisational backing.
6. Children's wholly autonomous spaces, created and managed by children themselves with no adult involvement or support (or even awareness in many cases).

Among the conclusions from the research by Shier and others was the suggestion that children and young people can influence public policy when they are well-prepared, trained, organised and believe in their own ability to advocate for change. This only occurs after a long process of active participation and commitment. A key enabling condition, Shier and others argue, is the interest of the young people. Adults will still have an important role to play, but they will understand and apply what it means to promote autonomy in children and young people (as opposed to dependency or manipulation).

Entrepreneurial education

It is important to clarify the terminology associated with entrepreneurship and entrepreneurial education.

Entrepreneurs innovate. The literature casts entrepreneurs as having an exceptional ability to see and seize new opportunities, the commitment and drive to pursue these, and the willingness to take risks (Martin & Osberg 2007). Their innovations are often associated with the establishments of for-profit businesses.

Social entrepreneurs focus on addressing a social purpose. Connected to issues of social capital, social entrepreneurship aims to open up creative ways to counter social disadvantage (Anderson & White 2011). Social entrepreneurs are change agents with a focus on identifying opportunities (Luke & Chu 2013). They need not use a business as their vehicle for change.

Social enterprises are businesses with a social purpose that reinvest their profits into the community. In schools, this could be an actively trading business established by students on the school premises or at another setting (e.g. a café, with students selling their products). This business produces goods or services for a market. A social enterprise uses

[1] *The child and youth participation literature has informed the development of this framework. In particular, Shier (2006, 2015), and Shier and Mendez (2012).*

business approaches and tools, such as preparing business and marketing plans and budgets to achieve a social objective, but it does not rely on funding or charitable donations.

A social enterprise shares many commonalities with a social entrepreneur, in that both involve the pursuit of social change. But not all social enterprises are entrepreneurial (Luke & Chu 2013).

Other terms encourage people to think like an entrepreneur, including 'intra-preneurs' – entrepreneurs who operate 'inside' an institution, business or organisation. In business, an organisation may set up an 'innovation space' (e.g. an innovation 'lab') where risk, and therefore learning through failure, is accepted as part of the innovation process. Perhaps reflective of this disposition and activity, 'spin-off terms' are also heard in education, such as 'edu-preneurs' or 'kid-preneurs'(www.kidchall.theentropolis.com).

The Paradigm Shifters initiative emphasised developing entrepreneurial-minded students. Being entrepreneurial-minded is about learning to 'think' like an entrepreneur – resourceful, flexible, creative and global (Zhao 2012). It is a disposition, 'habit of mind', or way of thinking and acting that people adopt as they live and learn (Lucas, Claxton & Spencer 2013a). The form of entrepreneurship students take through their entrepreneurial pursuits is up to them, as long as what they do creates value for someone else.

Studies, mostly from Europe, show that teaching entrepreneurial education is often viewed as either teaching:

- About 'it' (content based);
- For 'it' (prepare for future entrepreneurs); or
- As an approach through 'it' (process driven) (Dijk & Mensch 2015).

Debates over which is better are ongoing. A four-year study of a large group of Danish secondary school students from Year 9 onwards, showed that education *about* and *through* entrepreneurship have very different effects. The researchers found that education about entrepreneurship had a positive association with students' entrepreneurial intentions, but a negative association with school engagement. Education through entrepreneurship had the opposite effect, but they noted the level of teacher support in this approach was crucial to its effectiveness. Both approaches were more influential at years 9 and 10 than at years 11 and 12. The researchers concluded from their analyses that education *for* entrepreneurship was the most effective because it combines equally a focus on *about* and *through* entrepreneurship (Moberg et al. 2014a).

The European ASTEE consortium project (Moberg et al. 2014b) has developed a set of tools for measuring students' knowledge (learn to understand entrepreneurship), skills (learn to become an entrepreneur) and attitudes (learn to become entrepreneurial). The tools are research-based and have been validated. They are for all education levels (primary, secondary and tertiary education) and have been developed primarily to assist teachers in assessing the progress of their students and for students to evaluate their teacher's teaching.

Lee Shulman's notable work on 'signature pedagogies' and preparing learners for the world of work, helps frame the way in which schools can adopt different approaches to cultivate student capabilities (Shulman 2005). Shulman's framework has three dimensions: surface structure; deep structure and implicit structure. The first dimension relates to "concrete, optional acts of teaching and learning, of showing and demonstrating, of questioning and answering, of interacting and withholding, of approaching and withdrawing" (pp. 54-55). Deep structure consists of "a set of assumptions of how best to impart a certain body of knowledge and know-how" (p. 55). Finally, implicit structure refers to "a moral dimension that comprises a set of beliefs about professional attitudes, values, and dispositions" (p. 55).

Lucas and Spencer (2017), drawing on Shulman's work, describe signature pedagogies as the "teaching and learning methods which are most likely to lead to the desired capability…." (p. 7). They recommend that teachers ask themselves a series of "If" questions to inform their choice of method – such as, "If I wanted my pupils to be full of zest for learning, what method would I choose?" (p. 6).

Entrepreneurial learning is one signature pedagogy that could cultivate student capabilities. It has distinct features, including a major focus on: problems; opportunities; authenticity; artefact creation; iterative experimentation; real world (inter-) action; value creation to the external stakeholders; team work; work across extended periods of time; newness; innovativeness and risk of failure. There are similarities in this list to such pedagogical approaches as project and problem-based learning and service learning (a combination of classroom and community service), especially with its focus on problems, authenticity and teamwork (see Table 1).

Yong Zhao's work highlights another associated term, product-oriented learning. He writes that this stems from problem-based learning, but it differs significantly in terms of how it is practiced in most settings. The differences occur in the following five ways:

(1) developing the entrepreneurial mindset vs. mastery of content,
(2) initiated by student vs. initiated by teacher,
(3) strength based vs. deficit driven,
(4) quality of final product, and
(5) use of final product. (Zhao 2016, pp. 8-9)

Students report finding product-oriented learning more engaging than problem-based learning, attributed to the ownership and authenticity of their work. Whereas problem-based learning is often directed by the teacher to impart specific knowledge, product-oriented learning allows the student greater control in what to create. Students appreciate the fact that this work is valued by others and serves a purpose beyond assessment (Zhao 2016).

These approaches, known also for opening up more student-centred learning relationships with teachers, are supportive of entrepreneurial learning. But as Lackéus (2015) shows, they do not map across to all entrepreneurial learning features, as listed in Table 1.

Table 1: Comparison of entrepreneurial education and other 'similar' pedagogical approaches

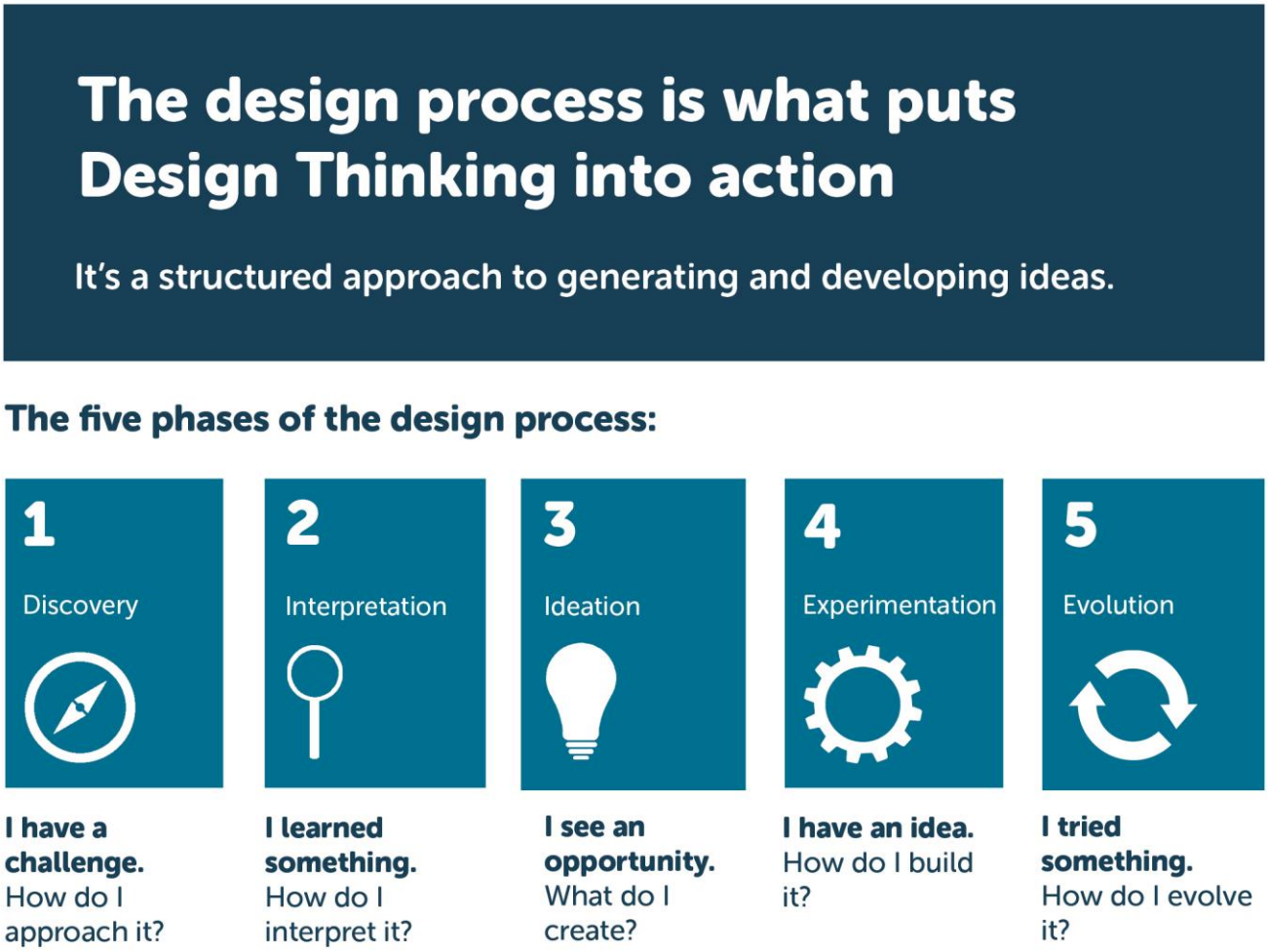
Major focus on	Entrepreneurial education	Problem-based learning		Project-based learning	Service-learning
Problems	X	X		X	X
Opportunities	X				
Authenticity	X	X		X	X
Artefact creation	X			X	
Iterative experimentation	X				
Real world (inter-)action	X				X
Value creation to external stakeholders	X				X
Team-work	X	X		X	
Work across extended periods of time	X			X	X
Newness/innovativeness	X				
Risk of failure	X				

(Lackéus 2015, p. 16)

In Lackéus' list, the aspects of iterative experimentation, newness, innovativeness and artefact creation connect well to the divergent and convergent phases and processes in design thinking. 'Design thinking for educators' is an example of a toolkit co-developed by IDEO (a global design company) and Riverdale Country School in New York (Riverdale Country School & IDEO 2012).

As Figure 2 shows, each phase has a specific purpose and process: Discovery (starting with people – empathy through research); Interpretation (ideation – coming up with ideas); Experimentation (prototyping and validation); and Evolution (evolving an idea that has been tried).

Figure 2: Design thinking process



Source: Adapted from the 'Design thinking toolkit' (see https://designthinkingforeducators.com/toolkit/)

A recent study by Mourshed et al. (2017), for McKinsey, found that a mix of teacher-directed and inquiry-based learning improves learning (as measured by Programme for International Student Assessment [PISA] scores), compared with teacher-directed or inquiry-based learning alone. In order to benefit fully from a blended approach, students need to have sufficient content knowledge and mastery. In terms of student capabilities, the best teaching and learning methods will depend on the desired capability and then working backwards from there to choose the methods that will lead to the greatest learning growth (Lucas & Spencer 2017).

Benefits and impacts:

Research and evaluations of entrepreneurial education have shown some short and long-term benefits for school students in different contexts, including:

- Increased aspirations to be entrepreneurial, with associated increased leadership activities outside school, and more students doing this through their own initiative (Moberg & Vestergaard 2013 – in primary school).
- Improved enjoyment and feelings of connectedness to peers and teachers (Moberg & Vestergaard 2013 – in primary school).
- Improved student effort (they persist), creativity and agency (they are more pro-active) (Huber, Sloof & Van Praag 2012 – in primary school).
- Improved skills to help them manage and adapt to change (Moberg & Vestergaard 2013 – in secondary school).
- Increased levels of entrepreneurial activity when students feel ownership over the projects they work with (Moberg & Vestergaard 2013), also evident in follow-up studies of secondary school students post-school (Elert, Andersson & Wennberg 2015).
- Improved capabilities, which together are sometimes referred to as 'life skills', such as creativity, teamwork and understandings of risk, social responsibility and resilience (e.g. Kruger 2015; Huber et al. 2012).

These types of benefits are very similar to what curricula around Australia are seeking to elicit from students. However, because this is still an emerging area of work in Australian schools, it is too soon to draw conclusions.

The importance of explicitly enhancing student mindsets is also evident in the research. Mourshed et al.'s research (2017) found that when students (from all backgrounds) have the 'right' mindsets (e.g. are motivated and have a growth mindset), their learning and growth is enhanced. Among their findings, they suggest that 'mindsets' are a better predictor of student achievement than socio-economic status.

Insights and next steps

The case for developing entrepreneurial-minded citizens is mounting and increasing notice is being given to the potential of entrepreneurial learning as an approach to developing entrepreneurial-minded students. The FYA and the National Centre for Vocational Education Research (NCVER), for example, are calling for a national strategy for what they call 'enterprise skills', which they see as closely linked to careers education (FYA 2016).

Similarly, England's Education Endowment Fund (EEF) has recently commissioned a large randomised control study exploring innovative approaches to career education. This EEF study shares many parallels with *The Paradigm Shifters* initiative, namely it seeks to discover "whether getting groups of teenagers to deliver a project that tackles a social issue relevant to their community, with the support of mentors, can help improve their motivation and engagement at school" (EEF 2017, n.p.). The English program is called Community Apprentice and was developed by Envision. It consists of teenagers working in groups of 10 to "identify an issue they care passionately about, come up with a way to help, and work with local business and charities to make it happen" (EEF 2017, n.p.). Students also participate in an inter-school competition to showcase their work, their skill development and the difference they made to their communities.

Entrepreneurial learning programs from preschool to PhD levels are not new. They have been on the increase around the world for decades, especially in the last ten years, especially overseas and in higher education institutions (Lackéus 2015). The diversity of the programs, and of the studies on them (e.g. size, scope, cohort, research methods, and research questions) provide many opportunities for learning. But they also make evident the significant knowledge gaps on entrepreneurial learning in schooling, particularly in Australian settings, given the different contexts and curriculums. This suggests an imperative to continue to develop robust evidence and examples of how schools in Australia are implementing or might implement entrepreneurial learning in practice and to what effect, for whom and in what circumstances.

It is clear entrepreneurial focused programs and initiatives in schools across Australia are already underway, but little is yet collectively known or understood of entrepreneurial learning in school settings, particularly through a collaborative networked learning approach. This research on *The Paradigm Shifters* initiative contributes to the knowledge in the context of entrepreneurial learning and teaching in two networks of secondary government schools across two Australian states.

4. About the research and methods

Research overview and aims

The aims of the research were to identify and understand what conditions help, limit or prevent:

- Developing entrepreneurial-minded young people; and
- Increasing students' participation as valued contributors and decision-makers in their education, and their engagement (i.e. improving student self-efficacy and agency).

To achieve the paradigm shift needed to adopt the initiative's three guiding principles, based on Yong Zhao's work, and informed by the wider literature and direct experience of teaching in secondary schools, the partners proposed that developing entrepreneurial-minded students needed the presence of three interrelated and reinforcing conditions.

The partners envisaged students needing to develop a suite of knowledge and skills, and the ability to think and act for themselves, as well as in a team. They should also be able to recognise their abilities, feel capable of taking action, and be willing to face a challenge (i.e. Capabilities, and given the initiative's focus – developing entrepreneurial-minded students – with a particular interest in dispositions. See also the list of terms provided at the beginning of this report). The partners proposed that what would also be needed is a context favourable to promoting and supporting the development of students' capabilities. This might include the time and circumstances, and processes and people, to make it possible for students to do or produce something for a personal and collective benefit (i.e. Opportunities).

The analysis for this report has been framed by seeing the initiative as offering opportunities for students, teachers, principals, schools, and their communities. These opportunities can be seen as the 'what' and the 'how' of the initiative. Capabilities reflect the knowledge and skills that participants in the initiative said students were developing, practising, applying and demonstrating. As the initiative was emergent and exploratory, reporting on capabilities was done in terms of participants' perceived benefits and outcomes. As noted above, the analysis frame included a focus on dispositions.

Core concepts

The research team began by developing working definitions for each concept to help in the design of the research questions and method.

As noted in Section 2, the definition of **entrepreneurial-minded** was developed from the work of, and with direct feedback from, Yong Zhao. Individuals or groups with this disposition have a curiosity that leads them to seek out and identify or solve problems worth solving. They look at problems as opportunities, rather than as dead ends. They apply their creativity and talents to develop innovative ideas and solutions. They care about the quality of what they produce, embracing mistakes as markers for learning and improvement. They are energised by the potential benefits to others, locally or globally, from what they do and produce.

The research team used Shier's work to define student participation and its application in this initiative to develop students' self-efficacy and agency. In particular, the team drew upon his 'Pathways to participation' planning and evaluation tool (Shier 2015). This helped situate the agency aspects of students, a key focus for this initiative, in the wider youth research and literature.

Student participation occurs when each student is listened to, supported in expressing their views, and their views are taken into account. They feel like they have a genuine stake in decision-making processes. They are involved as co-designers of processes and in the actual act of making decisions. They share power and responsibility for decision-making around their entrepreneurial opportunities, experiences and services or products. Adults play important roles in scaffolding and supporting this type of student participation by creating openings and new opportunities with and for students.

Research questions

The research sought to respond to three key questions:

1. What do students notice that helps limit, or prevent them from being entrepreneurial-minded?
2. What do adults and students do in the networks to develop students' participation in entrepreneurial learning experiences, and what constraints do they encounter?
3. What, if any, are the perceived benefits and shifts resulting from this experience for participants? Do the participants think these will be long-lasting?

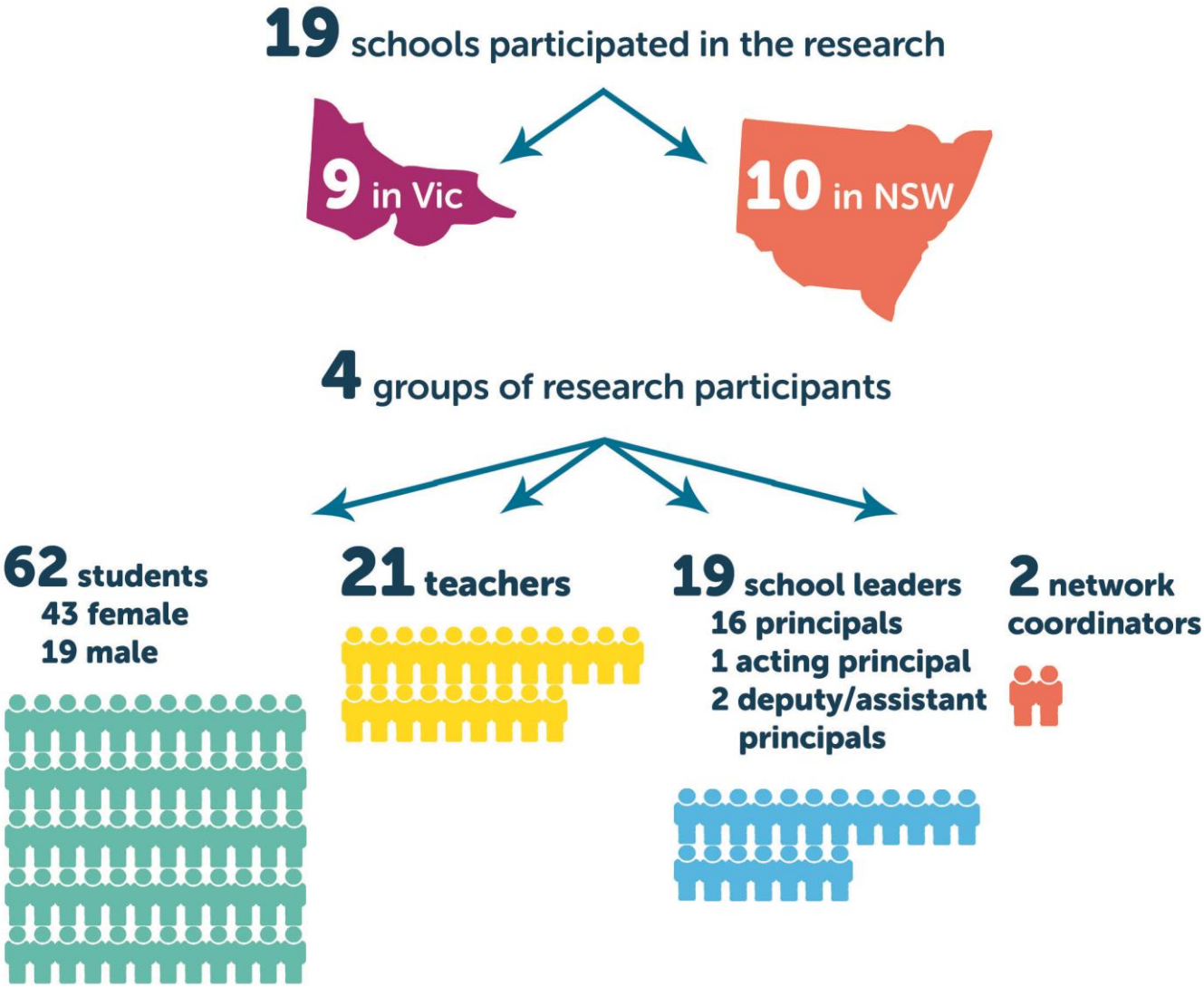
Research participants

Nineteen of the 21 schools in the initiative accepted the invitation to participate in the research. Ten of these were in NSW and nine were in Victoria (see Figure 3).

There were four different groups of research participants:

- Students (N = 62, 43 female and 19 male),
- Teachers (N= 21)
- School leaders (N = 19, of which 16 were principals, one was an acting principal and two were assistant/deputy principals)
- Network coordinators (N=2) (both former principals).

Figure 3: Overview of research participants



The students and teachers interviewed were those best-placed to comment, as they were in the school's core group or action team, with the teacher member(s) also responsible for coordinating the school's involvement.

At the time of interview, students' ages ranged from 12 to 17 years. Most of the students interviewed were 15 or 16 years of age.

Research methods

Data were collected using three methods: semi-structured interviews; two short questionnaires (one for teachers and one for students); and documentary analyses of 'artefacts'.

Interviews

Semi-structured interviews were conducted face-to-face and/or by telephone, and tailored to the group and purpose.

Students were interviewed with their peers in small groups (with two to seven students per group). They were interviewed at the end of the initiative to better allow them to make more informed comments. The group setting was chosen to make them feel more comfortable and encourage them to 'bounce' thoughts off each other. The researchers

thought this would stimulate further discussion. Students were asked: (1) how they were selected; (2) what problem they chose and what they did to respond to it; (3) about their experiences; and (4) in their view, what impact these experiences had on them. Students were also asked about the extent to which they agreed with a set of statements. These statements were designed to give a measure of their agency in the initiative (compared with their school in general).

Teachers, principals and network coordinators were interviewed by telephone and/or face-to-face during research visits to the schools. Two waves of interview data were sought from these groups – from the middle and following the completion of the initiative. In several cases, due to other commitments among the participants, the baseline and end-of-initiative interview questions were combined into one longer interview as part of the school visits in late May or early June 2017. In two cases, only the principal from the school was interviewed because of staffing changes.

For teachers and network coordinators, the baseline and end-of-initiative interviews were supplemented by 10-15 minute 'pivotal moment' interviews attached to each interview, as well as at key points in the initiative. Pivotal moments are turning points of change (for better or worse). It has been found to be an effective method for drawing lessons from experience. Questioning memory around pivotal moments is known to be more reliable than asking general questions about experiences that may have happened over a long period of time (Center for Reflective Community Practice n.d.).

'Pathways to participation' questionnaires

The research team developed two short questionnaires – one for students and one for teachers, administered once as part of each research team member's school visit. Questions focused on seven facets of agency thinking, with students and teachers asked first about the initiative and then about the school as a whole. Short written statements were informed by Shier's (2001) 'Pathway to participation' development and evaluation tool (created and validated in 2001 and subsequently revised). The questionnaire asked respondents to consider the extent to which they agreed with each statement. They could choose from one of four options: 'not at all', 'to a minor extent', 'to a moderate extent', or 'to a major extent'. Researchers used these data to measure one of the initiative's key concepts – student participation.

Artefacts

An 'action cycle' tool was developed for use by the school teams to help them plan, act, demonstrate and draw insights from their implementation of the initiative in their school. School teams shared reflections from these documents at school-based team meetings with the network coordinator, as well as at network-wide learning and development days. These reflections, along with each school's final end-of-initiative short report, a poster and three-minute video of their entrepreneurial learning 'journey', provided information to help triangulate findings from the interview and questionnaire data. See Appendix 3 for further information.

Sampling of students

The research team asked principals to suggest the names of students from their school's action team to participate in the small group interviews and to complete a short questionnaire. The researchers then invited these students to participate in the research. They only interviewed those students who agreed to participate and who had returned the signed parental consent form. A total of 62 students were interviewed, most of these participated in the initiative in both 2016 and 2017.

Analysis

The main type of information needed to address the research aims and questions came from qualitative data sourced from the interviews, supplemented by the surveys and artefacts. Themes across and within responses were recorded as the validated text from the research.

The team drew on key qualitative processes and insights from Miles and Huberman (1994) and Strauss and Corbin (1998). The analysis took place throughout the research project as an iterative part of the research process. The

research team individually analysed responses by cohort (vertical analysis), writing summaries of the analysis at key milestone points in the research (e.g. completion of round one interviews, then again at the end of the round two interviews). This encouraged deep familiarisation with the data and was the forerunner to coding the transcripts, keeping the coding aligned to the context of a participant's response. From this, each team member began to identify possible themes. The team met regularly to compare and challenge assumptions and to review and name the themes, drawing in their analyses of the other data being gathered from the artefacts and questionnaire responses. The research feedback processes were repeated, but across cohort responses (horizontal similarities and differences). The researchers' socialised the findings with those directly involved in the initiative. This process provided a further feedback loop, allowing participants to examine the researchers' findings and claims, and if necessary, challenge them.

In addition, three external reviewers were approached to review the report from an academic, policy and content knowledge perspective.

Strengths and limitations of the data

An important strength of the research is the data's qualitative detail. This enabled an in-depth look at the different ways in which the schools' starting points, and the various school and community contexts, impacted on the interpretation and implementation of the three guiding principles. The data came from those directly engaged in and affected by the initiative's implementation. Response rates were excellent. Only two schools changed the number of people interviewed (because of extenuating circumstances).

Neither the schools nor the research participants were randomly selected. Schools self-selected, and participants opted into the initiative for a multitude of reasons. Consequently, it is not possible to generalise the findings to all schools, which means caution needs to be exercised in the application of findings (hence the use of such language in the executive summary as 'could', 'suggests'). But, given the need for detail at this stage, the approach is well justified. The fit-for-purpose research design also allowed for the efficient gathering of information to illuminate the experiences of those working within the initiative. This has paved the way for further discussion and clarity around the next steps to be taken. While compliance effects in responses to the questionnaire are possible, it is unlikely that they were an issue for this questionnaire (e.g. feedback was non-identifiable and seen only by the student, teacher and research team).

Presentation of research findings

The findings are organised into five sections: school and community contexts and motivations, student, teacher and principal findings, and participant views on next steps. The interview data from the two network coordinators are integrated within each section, given they were working directly with all participant groups in the initiative.

By organising the findings in this way, the contributions, challenges, opportunities and insights of each group are made visible. This lays the foundation for a discussion of the findings, as presented in Section 9.

Participant quotes include state (i.e. NSW or Victoria) and group (e.g. teacher) identifiers. There is one exception to this, the network coordinator quotes. The research team decided that because the initiative only had two network coordinators, then the state identifier would be removed for the sake of confidentiality. The research team also decided to include the identifier of female (F) or male (M) for students (unless students indicated otherwise when responding to the research team's student questionnaire). Studies that examine the world of work testify that differences among the sexes exist (OECD 2015). The researchers decided that given the focus of the initiative and its research, they would also include this identifier with the student quotes. This concern did not apply to the other participants in this study (i.e. teachers and network coordinators).

5. The context for the initiative in schools

The research team was particularly interested in understanding how principals and school action teams were implementing the initiative's three guiding principles in their school contexts. This meant that close attention was paid to the conditions that assisted or constrained the use of these principles in the schools.

It is important then to first give an overview of the school and community contexts in which the initiative ran, including how schools formed their action teams. Understanding the reasons why schools chose to join the initiative is also important.

> "…. if it's not personalised in the 21st century, then it isn't preparing students for the world into which they're going, where things are much more personalised and customised. And it's not preparing them to operate as a person who could deliver personalised and customised data… We don't know what young people can do till we give them the opportunity to do it."
>
> **PRINCIPAL, NSW**

School and community contexts

As explained in Section 2, each school that chose to join the initiative was at a different starting point coming into it. Each had their own unique history, context, challenges and opportunities, which influenced how they operated and what they prioritised. These local contexts and drivers appear to have been important considerations in their decisions to join the initiative.

Many principals and teachers reported rapid change in their communities, including growing and/or declining populations, and changing community profiles (such as the arrival of new refugee families). These shifts meant schools needed to adapt and refocus to meet the needs of their students and community.

All schools spoke about their relationships with families, students and the wider school community, emphasising the desire to maintain or strengthen these links and partnerships.

Some schools reported that their students were academically successful and engaged, while others reported that their students were academically successful, but cooperative and under-performing, or were at risk of leaving school early.

Some schools noted specific challenges, such as family violence, drug use and high levels of unemployment as influences on their priorities and approaches.

Some schools reported that the heavy emphasis on content and internal and external written tests (measured by ATAR scores and similar metrics), made it difficult to experiment with other approaches to teaching and learning. Other schools were applying or moving towards a model in which students had greater choice and voice in their schooling. In these schools, the ATAR was one measure, but not 'the' measure.

All schools in the initiative had processes in place to tap into their students' interests in a range of ways. These included personalised and student-led learning (e.g. using a flipped classroom method, or ensuring every student had an

individual learning plan), student-run clubs, a breadth of elective choices, and opportunities in sports and the creative arts.

Many schools were involved or had been involved in various evidence-based innovation and school improvement initiatives and/or partnerships focused on enhancing student capabilities and teacher practice.

Motivations to participate

The research team asked principals and teachers why they decided to join the initiative. The responses show that schools were influenced significantly by the initiative's potential to help address what they saw as gaps in current approaches to schooling. Schools welcomed the opportunity to try a new approach. Two interrelated drivers became apparent:

- **Needs:** The schools in the initiative saw their involvement as a potential benefit to current and future students and, in some cases, the broader school community.
- **Alignment:** The schools that chose to opt in saw an alignment of the initiative's principles with their school's current programs, strategic directions and/or priorities. Participation allowed them to continue pursuing their objectives while learning from others, gaining additional support and insights.

> "We've always been interested in and passionate about innovation as a school. And this seemed to provide a good opportunity for that. But the second bit was really around being able to connect with others to have them share conversations about the work and looking at some like-minded schools."
> **PRINCIPAL, VIC**

These two drivers point to a strategic intent among principals and teachers for a major shift in the purposes of secondary schooling. This, of course, might be expected from an initiative for which schools self-selected.

Three predominant themes were evident in the decision to join the initiative:

Rethinking purposes and processes of schooling: A strong and recurrent theme in the interview responses was the perception of deficits in present day schooling purposes and processes. Many principals suggested that Australian secondary schooling had a "narrow" or "unhelpful" focus on ATAR and on test-based measures such as NAPLAN, which led to anxiety among students. This focus was seen to be at the expense of what the teachers and principals saw as key capabilities and discrete skills within these - collaboration, communication, creativity and problem-solving.

The flexibility of the guiding principles: The initiative's three broad guiding principles, rather than a step-by-step program with predefined participants and limited outcomes, was a reason given by most principals (as well as many teachers) for participating. This more open approach offered schools a chance to continue with or deepen their existing programs and priorities. These were usually focussed on engaging students or developing essential capabilities as part of a bigger education transformation. However, how and to what extent participating schools had already journeyed down the

> "We actually have to change our school and we have to get our kids connected to learning. We lose too many kids. This, to me, was a really good opportunity to do something different. Because what we were doing didn't work … it wasn't about learning. It was about you just come to this place. … This gave us an opportunity to investigate that and to find out what a different kind of learning might look like."
> **PRINCIPAL, VIC**

entrepreneurial learning path varied. Some schools were taking their first steps and were seeking inspiration and reassurance, while others had transformed their school already and were more interested in embedding and enhancing their tailored models and sharing their learning experiences.

A networked-learning structure: All schools noted the collaborative learning opportunities presented by being part of a network of 'like-minded' schools. The different contexts, starting points and implementation strategies were seen by a number of teachers and principal as being strengths of the network's design. Several Victorian schools saw this network as complementary to other geographic or student cohort based networks to which they already belonged. Similarly, two schools in the New South Wales network saw their decision to join the initiative as consistent with their school's culture to develop strategic partnerships.

Some principals also mentioned their deliberate efforts and innovations to deepen **student engagement** and improve student learning, retention and behaviour. This was particularly evident in comments from principals of schools with students who were experiencing socio-economic or other forms of disadvantage. Participation in the initiative was seen by these principals as an opportunity to develop students' capabilities and deepen their engagement in schooling. A few schools saw this as an opportunity to develop attractive points of difference with other local schools, or build their reputation in their area as a 21st century school. One principal stated:

> ***"When you get … schools who are thinking that there should be a different approach to learning, to better cater to the needs of students, then we can learn from each other … our coming together as a group and sharing ideas further strengthens that conversation in the wider community and gets other schools to start thinking and reflecting on what they are doing … It strengthens our resolve, it's reaffirming." (Principal, Vic)***

School action teams and the recruitment of members

Schools created their own school action team. These consisted of one or two teachers and a core group of students who co-designed and co-led the action(s) in their schools. The number of students on each team ranged from four to about 20 students, with teachers and principals reporting that many more students at each school were connecting to the initiative (e.g. a whole year level, multiple year levels, the whole school). Students participating in the initiative ranged from Year 7 to Year 12. About half of the schools focused on Year 9s, others focused on Year 8s, Year 8-10s, Year 10s, Year 11-12s or the whole school. Key influencers on the year level focus were the schools' motivations for joining the initiative and the nature and scope of their entrepreneurial learning pursuits. Each school also considered existing timetabling opportunities and program offerings.

Teacher selection

In most schools, a teacher was responsible for coordinating and supporting the implementation of the initiative for its duration. Four schools had two teachers working together in this role. Another four schools experienced staff turnover in this role for various reasons, including staff leave and changes in employment.

Principals usually selected teachers for this role because of an identified openness to change and willingness to embrace the initiative's guiding principles. The end-of-initiative interviews show this mindset, particularly an openness to change, flexibility in teaching and a willingness to "step back", was an essential enabler or precursor for teachers to pursue the three principles.

Some teachers were selected because they brought key knowledge, skills or networks of relevance to the initiative. This included, for example, a business teacher who could assist students in developing their businesses and business platforms, or a technology and applied studies teacher who could support students in recording and communicating their entrepreneurial learning journey, or science and math teachers in cases where the entrepreneurial pursuits were connected with those subjects within the curriculum.

Typically, the process for selection involved a school executive meeting or a discussion between the principal and teacher/s. In one case, it was the teacher who brought the initiative to the principal's attention, made the case for the school to join and offered to coordinate it (this teacher was also the school's assistant principal).

Not surprisingly, the teachers selected for the action teams tended to be very experienced teachers and already in leadership roles (e.g. four of the teachers were also assistant or deputy principals). Most teachers, including two recent graduates, had school-wide responsibilities for teaching and learning, for student leadership and voice, or for entrepreneurialism. These leadership roles, and the principal's visible commitment, allowed the teachers considerable operational flexibility to support the implementation of the initiative's guiding principles (e.g. time release for the necessary strategic planning and coordination). It also allowed for a school-wide perspective and alignment of the school's actions in the initiative with existing programs and priorities. For newer teachers, involvement in the initiative was perceived as a professional development opportunity.

Student selection

Students either chose to participate in the initiative after a teacher or school leader brought it to their attention (this was the case for about half of the schools), or were chosen by their teachers or principal to be part of the school's core group. At several schools, students sometimes self-selected, mediated by an expression of interest and selection process that was controlled by teachers. In these cases, schools used a variety of criteria – at risk students, student leaders or those demonstrating great leadership or development potential, congruent interests with the initiative and its principles, or membership of a class or year level. The illustrative cases below provide an insight into student selection processes.

Illustrative case 1:	**Illustrative case 2:**
The teacher invited three students to join a planning team to identify and respond to a problem at their school. The students then advertised in school newsletters and spoke at assemblies to encourage peers to join their planning team.	Building on existing priorities and work, the school pursued a 'school within a school' model to improve student engagement and retention in the senior years. The principal and teacher targeted Year 10 students and invited them to participate in the initiative. Interested students went through a selection process, with only those demonstrating commitment able to participate. Many students who participated were at risk of leaving school early. Each student, in collaboration with the teacher and parents, had an individual learning plan and built their timetable and curriculum around a passion/interest area. If a student's commitment fell, then they were removed from the program and some of the privileges and freedoms it provided were withdrawn (e.g. student choice, student self-paced learning).

Only some students could readily identify why they were invited to participate but the findings show none of them seemed concerned by this. They could all cite possible reasons for why they may have been invited. This included having a previous interest or involvement in student leadership, entrepreneurial activity, education reform, or associations with pre-existing school programs that the school then expanded or deepened as part of this initiative.

6. Student findings

At the heart of this initiative is a belief that students should have a direct say in their schooling. The student findings come from the perspectives of small groups of students in each school participating in the research. This section uses data from the student interviews, questionnaire feedback, as well as their short films and entrepreneurial learning journey posters. The three conditions proposed for a paradigm shift – dispositions, opportunities and capabilities – guide the presentation of the findings. This section concludes with the students' reflections on their experience of the initiative, including enablers and challenges.

> "The biggest surprise for me is how much the perspective, the total atmosphere had changed [as part of this initiative] … Students were so involved, they were enthusiastic and enjoying it."
>
> **STUDENT, F, VIC**

Dispositions

Students' advice on how best to develop their entrepreneurial-mindedness was sought via three questions. Two questions asked what advice they would give future students and teachers who might join the initiative. A third simply asked: "Did anything surprise you about your experience, good or bad?"

Tables 2 and 3 summarise the advice students gave to students and teachers, respectively.

The language in both tables comes from the students, ensuring that their voices are heard. Clustered around phase and theme, the advice seeks to assist schools in identifying what they might need to consider at different implementation phases of entrepreneurial learning in schools.

Table 2: Do and don't advice from students to students to boost entrepreneurial thinking and acting

Phase	Thinking	Acting
As you begin	▪ Go in with an 'open mind' ▪ Be prepared to get out of your 'comfort zone' as much as you can ▪ Be prepared to learn new things about yourself	▪ 'Jump in' because friends can help you a lot ▪ Take opportunities and make the most of these ▪ Don't get involved just because of your friends. This won't be enough to sustain your motivation ▪ Don't complain about problems in your school. They are your problems too to solve
As you get going	▪ Fully commit ▪ Focus on your 'end goal' ▪ Enjoy yourself because teachers are there if you need them ▪ Believe you can take control for what you can in your education	▪ Play to your strengths, follow your passions ▪ 'Speak up' because your opinion does matter ▪ Act on an idea if you are serious about it ▪ Give your project or team a name because it helps give your work a narrative ▪ Do activities and tasks with others

	▪ Recognise that your idea won't be the final idea. Ideas are often accumulative ▪ Be fearless ▪ Don't doubt. Doubts are normal. Push through these feelings	▪ Embrace working with students 'above and below you' in years ▪ Don't be afraid to talk with teachers or students. Stay calm and take your time ▪ Don't pull out straight away. Sometimes you need to wait to discover what interests you
As it gets tough	▪ Accept at times things will plateau ▪ Accept things might not go smoothly - it's ok to make mistakes ▪ Don't worry about set backs	▪ Persevere, 'stick at it' ▪ Use time wisely and plan ahead ▪ Ask for help if you get stuck

Table 3: Do and don't advice from students to teachers to boost entrepreneurial thinking and acting

Phase	Thinking	Acting
As you begin	▪ Trust us ▪ Recognise that everyone is smart and talented in different ways	▪ Let us be in the 'driver's seat', put more control in our hands, 'step back', 'let go' ▪ Discover what we are interested in. Give us opportunities to express our interests, ask us what we want ▪ Make school more relevant to what's in the 'real world' ▪ Develop a bond with us
As you get going	▪ Give us a chance to surprise you, to show you what we are capable of ▪ Realise that you are learning too ▪ Remember these are student not teacher 'projects' ▪ Don't underestimate us	▪ Give us choice, make school a bit less structured ▪ Discuss with us what we could do to benefit the community ▪ Encourage us along with our ideas ▪ Give your honest opinions ▪ Act on feedback you seek from us ▪ Be there to guide and support us if we need it ▪ Don't dominate conversations with us or 'shut us down' ▪ Don't make everyone do the same thing ▪ Don't tell us
As it gets tough	▪ 'Be present' ▪ 'Back us'	▪ Be there to guide and support us if we need it ▪ Be present (physically) and observe

What do the findings show about the advice from students?

In both sets of advice, students gave more 'do' than 'don't' statements and made clear that they still needed and wanted teacher input and support.

The advice to students reveals three key themes – motivation (e.g. 'act on feedback'), student self-efficacy (e.g. 'don't underestimate us') and student agency (e.g. 'put more control in our hands'). Two less common themes are also evident – resilience and wellbeing ('persevere', 'focus on your end goal', 'it's okay to make mistakes') and the social relations that support these ('friends can help you a lot').

The advice to teachers shows a strong emphasis on students seeking more student agency – 'let us be in the 'driver's seat'', 'ask us what we want'. Students' advice was also quite specific around the habits they believe teachers need to cultivate and act on to help develop student agency. This is seen through language such as, 'give us …', 'discover what …', 'don't tell …' 'be there …' and 'be present'.

What was influencing the sorts of advice students were giving?

Two key themes influenced student advice:

- Teacher behaviours that encourage or discourage student agency
- Students' negative emotions

Teacher behaviours that encourage or discourage student agency

Across the schools, the extent to which students felt they exercised agency and could point to examples of this varied. Often these examples were couched with reference to their perceptions of teacher behaviours. This possibly reflects the different starting points of schools in the initiative. The interview and questionnaire feedback suggest that outside the initiative, not all students believed they had enough agency in their schooling. Indicative of this is the comment from one student about his school's guest speaker program for students: *"we never get to choose"* (Student, M, NSW).

In some of the interviews, students recounted stories of teachers modelling behaviours for students that encouraged them to develop habits of agency. This excerpt from a conversation between students is illustrative of this:

> ***"… there was this point in time where we had already got an idea … And we wanted a bit of reflection from one of the teachers that supervised the project. We said, 'hey, are we allowed to do this?' And they just looked at us and said, 'you can do whatever you want'. And we were all intimidated … we said, will this work, [the teacher] had to keep reminding us that that's what you're here to find out. …we find ourselves a little conditioned to think that this is the way you have to learn, and when you're finally presented the opportunity, although the immediate reaction is a bit of a setback … the long-term effects of that are really surprising, because you say, 'wow, what's next for me, what else will I be able to think outside of this box?'" (Student, F, NSW)***

Teachers' modelling behaviours to encourage student voice and agency was often met with surprise, causing students to reflect on how this made them feel, on their teacher relationship, and sometimes to rethink their goals.

Often the students would elaborate on the value that certain types of teacher behaviour create for students:

- Teachers' guiding – builds students' confidence
- Teachers' participating in, rather than dominating conversations – enables the student voice and leadership to develop
- Teachers' encouraging and supporting – helps students persist and believe they can do 'it'

Common across the responses was a view that students want and need teachers to "step back", but they did not want them to "sit back". As these illustrative quotes show:

> ***"Mr [teacher] said he's not going to let us fail completely, because there's always going to be that safety net …" (Student, F, NSW)***

> ***"Just step back … take responsible risks ... it keeps the lessons alive and keeps the students wanting to learn". (Student, F, Vic)***

> ***"Confidence builds up as you actually develop your ideas, through getting or seeing other people's ideas. It develops through getting teacher guidance from one step in the process to the next". (Student, F, NSW)***
>
> ***"Definitely put more control in the students' hands, but be there to guide them, if they needed it." (Student, M, Vic)***

Students in six of the 17 student group interviews made specific reference to the phrase, "step back". One student said they would notice this was happening if their teachers were simply inviting ideas from them, just by asking, "Does anyone have any ideas for this?"

This evidence suggests students were using the phrase to signal a desire for a different relationship with teachers. The following comments illustrate this point:

> ***"I think the teachers are under the impression that they need to direct a whole lot of our curriculum. But there is a lot of areas where I reckon teachers could just give us like freedom in it and we will – it might not always work out, but if it does it will work in to something really unique and really original." (Student, M, Vic)***
>
> ***"… there was a time when we were seriously wondering if we could finish this, but we had our teacher there to support us and really, she sat down with us and said, you guys can do this. You need to finish this. Come on, guys. It was really nice to have that support." (Student, F, NSW)***
>
> ***"Teachers need to start believing that although they're not dominating the conversations being had, that they are incredibly helpful in this process. Just because you're not actively controlling what's going on, that doesn't mean that you're not participating." (Student, M, NSW)***

The topic of student agency, and a request from some students for their teachers to "step back" was also a feature of the network workshop days. This was not a reflection on the individual teachers present, but students' broader observations about teachers in general. Student feedback indicates that they value the role of teachers, but in some of the schools, students thought different teacher behaviours would enhance their role.

Negative emotions

Less often, students proffered 'don't' statements in their advice. This came from students in nine of the group interviews and tended to focus on negative emotions – "Don't be afraid", "Don't worry", "Don't be scared", "Don't doubt".

Negative emotions were thought to get in the way, or stop students from having the confidence needed to make the most of the entrepreneurial learning opportunities on offer through the initiative.

More often than not, as the 'don't' advice in Table 2 shows, students provided a rationale for their advice, or a possible solution for overcoming negative emotions. Confidence, or a lack of it (due to such feelings as fear), was a recurrent theme in the discussions with students. For example, when talking about students' lack of confidence to "just jump in", while noting the benefits if they did jump in, one student said:

> ***"… just think everything that you do during a project like this, it's all for your benefit, so you should take advantage of it. Like, any mistake that you make isn't going to be costly; it's just going to improve you as a person … because the next time it happens you're going to know what to do. (Student, M, NSW)***

Opportunities

Students' entrepreneurial learning pursuits, and the opportunities created to support them, were the key focus of the initiative's 'work'. Yong Zhao called these pursuits their 'products', designed to bring the initiative's three guiding principles to life (see a summary of these 'products' in Table 4).

The data for this table draws from the interviews with students, teachers, principals and the network coordinators. It has been cross-referenced with the schools' end-of-initiative short reports and the videos students made.

Table 4: Student entrepreneurial learning pursuits in the initiative

Students were:
Redesigning the end of year activity week for Years 7-9, consulting with students and teachers to create a new 'pay it forward' week of activities underpinned by Yong's three guiding principles
Creating a pilot for a new cross-year-level student-led seminar approach for and by students, with an intent to spread it across the school
Redesigning the elective program for Years 8-10 students, using evidence from student proposals and a creative art installation forum open to participation of all students and the community
Growing produce for the community via a dedicated program developing students' skills and raising their awareness of health issues, with support from their peers from the school's student-led newspaper
Showcasing and selling their art and design to a wider network and helping launch students' careers via the creation of a new student website platform
Developing a website for showcasing their passion projects and for getting feedback from other student passion projects
Redesigning the library as a prototype for students to identify and redesign future learning spaces at school, benefiting them, other students and teachers
Building a prototype website platform for students to build their own assignments, creating better opportunities for engaging with their learning experience
Following their interests and passions via diverse opportunities (e.g. Genius Hour and a whole school Creative & Innovation Team made up mainly of students)
Starting a business and writing and selling their novel are two of the passions Year 10 students pursued, facilitated through a 'school within a school' model to improve engagement and open new pathways to further study or employment
Reimagining their school's perception in the community by researching, hosting events and school tours, and making a video to showcase their school's transformation
Forming small interest based groups to create a sculpture park, a community market, an early learning program and an outdoor learning space/shelter, all projects that were unique and useful to the school and local community
Identifying unmet community needs and designing a process for choosing and supporting one need at a time to address that need and improve community connections

Running multiple projects for the benefit of others in their local community, including IT sessions for seniors and personal projects related to local environmental issues and potential solutions, presenting findings to local government
Developing prototypes of products with the school's existing regional industry partner to identify new areas of market opportunities and potentially new jobs to overcome a lack of job opportunities in the area
Reimagining what work experience could be for Year 10 students by designing and running a work experience expo for Year 9 students to create a process for more student choice and voice in their future pathways
Co-designing a new young entrepreneurs program of diverse social enterprise to capture the determination and efforts of students to make a difference in the local community and redesign approaches to work experience

What do the findings show about students' entrepreneurial pursuits?

What students chose to focus on can be seen as a combination of opportunities to seize or problems to solve.

All the areas of focus show students were seeking to change something in their school or local community to the benefit of others, not just themselves. Students' pursuits reflect different, but often connected, actions to improve one or more of the following:

- Structures or processes for greater or better student voice and choice (i.e. personalising schooling more than students currently perceive is the case) (e.g. the approach schools take with 'electives').
- Students' ability to be change agents.
- Students' entrepreneurial skills and mindsets, including the development of other potentially transferable skills.
- Students' engagement in schooling (and related to this, improving school pride and connectedness, including with broader community).
- Community perceptions (of the school).
- Community issues (social, environmental, health).
- Current models of work experience.
- Potential post-school outcomes for students.

Applying entrepreneurial learning processes, the products represented hands-on opportunities for each school's action learning team. In some cases, these opportunities were sustained over the course of the whole initiative. In part, this can be attributed to school teams taking a while to get going because what they were doing was new. The network coordinators' reminders and nudges to school teams, along with the regular and visible showcasing of progress at each network workshop days, helped keep the pace of the initiative moving.

Most of the actions were within the school context, although six involved sustained connections with external groups (The Smith Family, a community centre, a local industry, a famous nearby sculpture gallery, local government, and a preschool). Many more actions involved other forms of linkage with the community, such as expert mentors matched to student passions and talents, artists and guest speakers who supported or motivated students in their own pursuits, or services provided by students to members of the local community (like a 'drop-in' IT support service). Several of the entrepreneurial pursuits resulted in authentic events, organised by the school (in addition to the initiative's events). These were also open to the local community (e.g. local showcase and pitch events, or markets where students could sell their creations).

The actions taken by schools differed in type, scope and audience. This was in part a reflection of the different problems the school teams sought to resolve, or opportunities they sought to address.

What was influencing the entrepreneurial learning pursuits of students?

The initiative's guiding principles, students' interests and what students were already doing in their schools shaped the opportunities chosen. These decisions were also shaped by school and community contexts (e.g. pre-existing priorities, school programs, as well as what the principals saw as the potential benefits for joining the initiative, as discussed in Section 5).

In addition, the network workshop days in each state and the final whole of initiative showcase event shaped what students got to experience and how they experienced it.

Through the process of developing and implementing their ideas, this too sometimes led to a change in scope – *"[Our] project was so different [from the beginning] … we expected everything to be organised …it was chaotic"* (Student, F, Vic)**.** It also sometimes led to a change in direction (e.g. students began by developing a policy for using mobile phones in school because nothing was in place. Then they stopped this to work with their school's industry partner, generating solutions for problems identified by the industry partner).

Capabilities

All students reported specific benefits and outcomes related to developing their entrepreneurial-mindedness.

Student reported benefits

Students' identified two key benefits of the initiative:

Learning new knowledge and skills. These were numerous, with the most frequently mentioned being teamwork (self-regulation through better time management; clarifying roles and efforts – especially for leadership roles within teams) and, related to this, communication skills (public speaking, pitches, writing and interviewing).

At other times, the focus of the entrepreneurial pursuit determined the skills mentioned, such as accounting and financial skills or researching different products and services.

Students often mentioned skills linked to the development of the video (an artefact that all students produced from the initiative). These included interviewing, story-telling and technical audio and filming skills.

Students were also motivated by knowing that what they were doing was mutually beneficial, and of value to others. Students said this felt different from simply doing "homework" or other textbook-based work, because with the entrepreneurial learning work they could more readily identify tangible benefits.

Learning new ways to work and learn. These new ways included working with different groups of students, those with whom the students would not normally work. Many students saw working as part of a self-directed team as a major benefit.

> "Leader wise it helped us … to [take] control of a situation and take charge in what we want … Again, time management, taking charge, doing what we need to do and time prioritise."
>
> **STUDENT, F, VIC**

> "I was really interested in seeing how other schools tackled their own issues, and how they were able to address that."
>
> **STUDENT, F, NSW**

Student reported outcomes

Students' reported outcomes reflected 10 interrelated themes:

Enhanced entrepreneurial-mindedness and capacity. Many students commented on the initiative's creative freedom as giving them the opportunity to pursue their interests in a productive and expansive way. Every student interviewed

noted a dispositional and learning benefit from the initiative's processes, suggesting that it had engaged them and brought them advantages aligned to their future career directions.

> ***"It definitely widened our view on how to be creative and how to be a young entrepreneur and how anything's possible really." (Student, F, NSW)***
>
> ***"Creating a job you want to do." (Student, F, Vic)***
>
> ***"Being able to express what I love doing … I found that really good, and now I've got a better idea of what I actually want to do for my future … I definitely want to open my own business with growing produce." (Student, F, NSW)***
>
> ***"I thought it [their entrepreneurial learning pursuit] was a very good, almost prototype, of what the world outside of school would be like … I think that is one of the best forms of learning." (Student, M, NSW)***
>
> ***"I never really thought of being an entrepreneur, I always thought a doctor, a fire fighter, a teacher, that's really everything I knew." (Student, F, NSW)***

Increased confidence. All students made some reference to their improving confidence. This was especially evident in the student advice (see Tables 2 and 3) and the accompanying elaborations of this advice. Students often gave 'before and after' scenario examples to demonstrate how their growing confidence was positively affecting what they were now willing and capable of doing (e.g. greater confidence when it came to public speaking, leading and networking, or simply speaking up in general). Students expected this improved confidence to be sustained.

> ***"It's gotten me more confident in my speaking and putting my ideas out in front instead of hiding back until the teacher asks me." (Student, M, Vic)***
>
> ***"For me I learned communication skills. I actually realised how important they were within a team, and how important it was to voice your ideas no matter how small you think they are." (Student, F, NSW)***
>
> ***"I'm now talking to people I've never met before, teachers. And I'm sure confidence is a really important factor when I start growing up – jobs, opportunities that pop up." (Student, M, Vic)***
>
> ***"We were all encouraged to put forward our ideas, all of our ideas, and really, the teachers actually held back and it was student led, which was really surprising, since I've never seen a teacher let students take control." (Student, F, NSW)***

Developing a more resilient approach to learning. Many students seemed to have become more resilient. This is evident in the advice they gave to other students at the end of the initiative. It is seen in their surprise and comments about where they got stuck, and how they were generally able to get unstuck (e.g. working in small teams of interest-based peers). It was also seen when students commented on aspects of quality and the effort required.

> ***"We did [aspects of our entrepreneurial pursuit] over and over and over again and I used that skill in other classes. So if I do a maths question or something I don't just do it once and say this is my answer. I just keep doing it again and again until I get it right." (Student, F, Vic)***

> ***"I was, actually, really blown away by how well made it [the video made by the students] was. That was definitely a highlight for me. That was just awesome. I was really impressed by what students can achieve. It was really professional quality." (Student, M, Vic)***

> ***"… to keep going and achieve what you want to achieve." (Student, F Vic) She described this as an 'entrepreneurial mindset'.***

Changed and improved relationship with teachers. It was common for students to report these changes and improvements. This was especially evident in students' elaborations of teacher behaviours and the value this created for them.

One student described such a change in detail:

Illustrative student case:

"With the [project], I found that it helped me with my agriculture, so now the teacher's actually understanding that I know a bit from the [project]. So, he's been telling me to, not necessarily teach the class, but tell the class what I've been learning from the [project], and he's found that the students have been learning more from me telling them, than the teacher telling them. So, it's like teacher-student interaction from the [project] to me – because it's a different relationship to a normal classroom teacher. They're more relaxed, and they're not demanding you have to do this by a certain time. Where in class, that's what the relationship is in a classroom. So, me telling the kids what to do, they're actually understanding it more. It's like they don't want to listen to the teacher, but they're happy to listen to your peers." (Student, F, NSW)

Improved collaborative capability. Students' related this specifically to getting the student voice raised up and heard. This was a recurrent theme and achieved, in the words of some students, "by practising in small ways to build your confidence" or by "doing tasks with others because you can 'bounce' ideas off each other, or start with doing tasks with just one person, if you can't do it with whole group to start with", or being able to "get out of your comfort zone, *as much as you can*".

Improved empathy. This was an outcome from, and mediated by, the collaborative processes and diversity of perspectives that students were exposed to in the initiative. A number of students would note that they were more aware of, for example, "knowing when to speak and when to listen" or the value of empathy for improved collaboration and, by association, an improved 'product' - "take time to understand each other as it makes it easier to speak freely". In turn, they reported that trust develops. More broadly, students often remarked that through this experience they were also developing a more expanded understanding of schooling.

A more positive view of school than before. Many students from across the networks reported this view.

> ***"It definitely makes me want to go to school. Instead of waking up in the morning and going, oh man, it's school… I just can't wait to get to school. <pause> It's great learning something that you enjoy because you can use those skills in the future if you want to, instead of going to a class where you're just not going to do anything with it … [and] if the whole school was still doing traditional things, I wouldn't be here today, having an interview." (Student, F, Vic)***

> ***"… some kids are not too keen on school and this [experience] definitely reinforces that there is a good aspect to school and that you can get a lot of creativity out of it." (Student, F, NSW)***

Enhanced learning transfer. Many students reported taking learning from one part of the curriculum and applying it in other parts, or applying their learning to broader 'life skills' outside of school.

"It was interesting to … use my skills [from] English … but changing [them] to suit the audience we were targeting, essentially, and making it formal … but still easy to understand for students and their parents and members of our school community." (Student, F, NSW)

"The experience was definitely helpful, definitely something that you could use later in life. Because helping people is generally good for you." (Student, M, Vic)

"It's also helped me adopt a more community-orientated mindset, in which I'm not doing things to just benefit myself, and I'm doing things to benefit others, and I think that's something that I want to keep thinking of, even when I pursue other subjects." (Student, F, NSW)

More and diverse connections. All students remarked on, and gave examples of, the new connections they had made, including with other students in their school, in other schools, in their local communities (e.g. retirees, preschool teachers, other professionals), and the world beyond. This came with an increased awareness of the importance of diverse connections and the opportunities they can present, including an expanded world view.

Improved student agency. Students interviewed felt there was a real difference between the extent they could exercise agency in the initiative compared to their 'normal' schooling experiences. Nearly all students were positive in their responses to the research team's questionnaire, either moderately or strongly agreeing with each of the statements (e.g. "I was supported in this initiative to express my views" and "I got to join in decision-making processes about what we did").

There were no differences between the female and male responses and each of the different facets measured elicited similar patterns of response. These results suggest that the students felt able to exercise agency in this initiative as part of their school action teams.

"He [Yong Zhao] really did make us more accepting of our own ideas, through his confidence, I think."

STUDENT, M, NSW

Enablers and challenges

The students' experiences of the initiative highlighted several key enablers and challenges.

Enablers

When students collaborated regularly together and with their teachers or other adults, many of whom brought particular knowledge or skills that the students lacked, students tended to report emotions or actions that suggested a boost to their self-efficacy and agency. Collaborations also improved their learning and connectedness to others. Students mentioned that the network workshop and school-based team gatherings facilitated this. Students who went to the final network learning showcase held in Melbourne for both networks frequently remarked on the positive impact this had on them.

Students also viewed small interest-based grouping structures within school favourably, but an even bigger enabler was the cross-age groupings of students within these elective or club groupings. This gave students an authentic audience – each other – to develop, practise, apply and demonstrate their leadership and communication skills, and their collaborative capability. It also provided them with fertile ground in which to cultivate ideas, develop new ones and transfer their learning.

Challenges

Students were asked where they 'got stuck'. They identified a range of obstacles and barriers. One of the most commonly cited obstacle was a lack of time and, associated with this, competing demands from other parts of the school, especially for students in the final year or two of school.

Another common barrier was getting teamwork happening, and then having it be effective. This included working out how to match people with specific skills to particular tasks, as well as more generally working as a team and not just a collection of individuals. One student pointed out that it was hard to establish a spirit of collaboration when in the rest of the school the unofficial ethos was one of competition between individual students for academic success. Some teachers were also seen to be reluctant to "step back" and allow the students the agency they felt they required.

The researchers asked students whether anything surprised them. This provided another way of identifying challenges, obstacles and barriers. Students reported that *many* aspects of the initiative surprised them. These were mostly positive and generally related to the (unexpected) extent to which their project changed, the students changed or the way they worked changed. The difficulty of the tasks sometimes surprised students, so overcoming such difficulties also surprised them. Students gave examples of overcoming difficulties, such as talking problems through with their peers, or having enthusiastic teachers help them maintain momentum. Other surprises, more often negative, related to the extent to which other schools (according to the students), apart from their own, resisted or feared change.

The partners asked each school to produce a three-minute video (covering the why, what and how related to their problem/opportunity, and results) from their entrepreneurial journey (so far). This 'product' was to be played at the whole-of-initiative showcase forum in May 2017. The partners and network coordinators identified a shortfall in knowledge and skills in story-telling and the technical skills of interviewing, audio and filming. To assist, the initiative's partners brought in an expert film-maker and story-teller to run hands-on workshops in both networks with students and teachers.

So, while there were many minor operational difficulties, the major ones students identified related to relationships, especially among themselves and, to a much lesser extent, with their teachers.

Summary of student findings

Information collected from the students suggested that they desire a new and different relationship with their teachers. Students want more agency than they believe they currently experience at school. But students still want teacher input and support. They valued the teachers' availability and "having their back".

The students felt they acquired new knowledge and skills, and new ways to work and learn. These were best acquired when students collaborated regularly with their teachers or other adults, and had an authentic audience (often in cross-age settings). A lack of time, often associated with competing demands from other parts of the school, impeded these developments. Also impeding them was the slow development of teamwork in some school action teams.

Students in the action teams embraced the opportunities offered by the initiative. Many remarked they had never before been offered such opportunities, or so much control, and while this was daunting at times, they were proud of how they were able to rise to the occasion.

Students could see benefits in the immediate and longer-term flowing from their participation in the initiative. They reported many outcomes, most commonly: (1) increased confidence, especially in the face of adversity; (2) a more resilient approach to learning; (3) increased connections to the community and a better understanding of it; (4) a more positive view of school; (5) enhanced entrepreneurial-mindedness and capacity; (6) improved relationships with teachers; (7) improved collaborative capability and empathy; and (8) increased agency.

7. Teacher findings

This section begins with how teachers understood the initiative's three guiding principles. Next it provides an overview of how teachers were approaching the initiative's implementation, using dispositions, opportunities and capabilities to frame the findings. Concluding this section are what teachers saw as the enablers and challenges to implementing the principles.

> "… it's really difficult for teachers, it requires a massive shift from teacher-centred to student-centred and the role becomes very difficult to know when to guide and mentor and teach and when to step back and let things happen…"
>
> **TEACHER, NSW**

Three guiding principles

During the first interview teachers were asked to identify what, in their view, was the essence of each principle (see Table 5). At the end of the initiative, teachers were invited to comment on which principles they embraced the most, and whether these principles could be adopted with any student.

Table 5: The three guiding principles and their essence - teachers

Principle	Finding
Develop more personalised education experiences so each person can pursue passions and talents to excel in unique ways	Providing students with opportunities for student agency around their own interests and strengths
Engage in creative and entrepreneurial product-oriented learning experiences that can in authentic ways benefit local and global communities	Students' capacity to create a product of value for someone else
Cultivate and prototype new approaches, processes and/or products	Processes of experimentation, iteration, reflection. Emphasis more on process than output

What do the findings show about teachers' understanding and embracing of the principles?

Principle one: Most teachers seemed to have interpreted 'personalised educational experience' in terms of providing students with a chance to pursue their interests, around their strengths, and develop new skills. Student agency was seen as an important element in opening up these opportunities. The way this principle was applied was diverse; there were few if any common practices. What was common, however, was an acknowledgement that the application of this principle required teachers' developing and supporting student agency.

Principal two: Most teachers interpreted this principle in terms of the capacity of students to provide a product of value in a real 'marketplace'. The application of this principle, however, seemed to stall until the concepts of 'entrepreneurial' and 'product' - concepts more often used for business than in education - were understood more

broadly to encompass addressing an unmet need or opportunity and creating something of value to others. Again, application of this principle had few common threads. Local context seems to have been especially important in shaping the application of this principle.

Principle three: Most teachers seem to have interpreted this principle in terms of processes that entailed experiment, revision and thoughtful reflection. There was less focus on the products produced. Some teachers reported this principle to be difficult to interpret and to use. Once again, the application of this principle had few common threads, again suggesting that local context was important for shaping its implementation.

What was influencing teachers in embracing the three guiding principles?

School context: The teachers interviewed reported that the extent to which any one principle was adopted by a school was strongly influenced by the school's context. Where, for example, the school had policies and practices in place that strongly aligned with one of these principles, there tended to be less explicit focus on them in the initiative. This can be seen in one comment from a teacher:

> ***"The school already has personalised learning. Every student has their own individualised learning plan. Their project was enhancing and furthering this, but with more of a focus on entrepreneurial product-oriented learning experiences and cultivating new approaches. So all three were pursued but the second two especially were pursued in this initiative." (Teacher, NSW)***

At another school, the local context influenced a stronger uptake of the second principle. A teacher said:

> ***"All of these projects were very authentic, and very much benefited the local community, both school and beyond … We work in a disadvantaged community. We have a high school family occupation index, which means that it's low socio-economic. We have low retention rates, low ATAR scores, all that sort of thing. We realised that kids need, there's a lot of family breakdown, a lot of distress, a lot of trauma … we realised kids need connection to community resources. They need relationships with adults, mentors, outside and beyond the school. They need opportunities to discover what potential pathways there are. They need social literacy." (Teacher, VIC)***

Where schools did not already have a focus on personalised student learning (the first principle) there was most often a strong focus on it in the initiative. In one school, it was the students who decided to make this principle their focus.

Making tangible progress: Newest to some schools were the entrepreneurial aspects of the initiative. There was some evidence of a shift in focus as the initiative progressed, and it was this shift that influenced teachers to embrace the principle on the entrepreneurial aspects. This was new for some schools at the outset of the initiative. The shifts appear to have occurred after aspects of the initiative had bedded down and were working well, where teachers (and students) could see progress being made:

> ***"… it was easier to let go and then you take on a different role where you became their mentor, where they [students] approach you, when they need help." (Teacher, NSW)***

Schools could then turn their attention to other aspects of the guiding principles.

Dispositions

Spread throughout the teachers' responses was the view that they needed to bring an open mind to this entrepreneurial learning teaching approach, especially for their work with students. This was summed up well by one teacher's comment about the difficulties of reframing and implementing student-centred teaching:

> ***"… it's really difficult for teachers, it requires a massive shift from teacher-centred to student-centred and the role becomes very difficult to know when to guide and mentor and teach and when to step back and let things happen … It really requires a different skill set, you need to get to know the kids a lot better and be more in a mentor role. Also you've got to wait for your moments to teach I think and that's the hardest part because I think you can kill the kids' creativity really quickly if you overdo it and if you mistime those moments, but if you get opportunities to teach it can be the most engaging learning they go through …" (Teacher, NSW)***

One teacher went as far as to say that, *"without a mind-shift, it's tokenistic"* (Teacher, VIC)**.** Another said**,** *"It's a different relationship with the students, there's a fair bit of trust involved"* (Teacher, VIC).

These are teachers who are skilled and committed (one reason why principals chose them for the initiative's school action team). They too, however, were commenting on the "struggles" to teach differently, pointing to the complexities involved. On a couple of occasions teachers thought this was a gap in their initial teacher education:

> ***"… struggles with facilitating by stepping back and allowing for problems to be fleshed out and not being a control freak, which is a super hard thing to do because it's so different to that teacher directed learning which is honestly what we're still taught at uni." (Teacher, NSW)***

Several teachers, like a number of students, remarked that even with a strong commitment to the initiative and a willingness to develop their entrepreneurial mindset, they were restricted by negative emotions. As one noted:

> ***"I was very fearful and I think aware that I could be judged. At the same time I had those moments, 'No, I'm initiating something new. I'm experimenting. I'm being creative.' … it's almost a conflict sometimes. It's really interesting we keep telling our kids don't be scared, go forth but as a teacher I wasn't practising what I preach sometimes." (Teacher, NSW)***

Reflections like these remind us that teachers are learners too. They also suggest that current education conditions can be anxiety-producing and antithetical to risk and embracing entrepreneurial learning.

In summary, the data show teachers understood the open-minded disposition needed for this type of teaching, but in practice, many found it difficult to implement.

Opportunities

The initiative exposed students to multiple and diverse entrepreneurial learning opportunities at network workshops and school. Typically, this was done collaboratively and in new ways.

What is influencing the opportunities given to students?

Teachers suggested how students could get the most out of entrepreneurial product-oriented learning opportunities. Three themes emerged:

The importance of a supportive school culture: All teachers thought it was important to establish and support the enabling conditions needed for the initiative's success. The teachers saw the principal and others within school leadership as key players. All the roles needed to be clearly defined. This was seen to take time, and so many of the teachers suggested starting with the lower year levels.

> "I tried to stand back and let them drive it, but in many ways I had to intervene quite often to get them on track, so that's where it needs to have a lot of time."
>
> **TEACHER, NSW**

Many teachers also made observations about the time needed to develop student skills to make the most of their learning opportunities. The pivotal moment and insight findings suggest that the quicker this was done, the better, because student confidence and motivation can drop without a visible 'return on effort'.

Similarly, teachers reported they needed time to develop a new repertoire of skills, and to develop confidence in their exercise. The network coordinators said this too.

> ***"Time and leadership support. Clear expectations about what you (the educator) and students are doing and not doing from the get go. Focus on younger cohorts – build their foundational skills and key competencies … for most of the students the gap between their ability to be self-directed and go off and be successful … was probably too big. So I think a starting point if I started again as a first step would be doing something at the younger years which might focus on what we thought were the key competencies needed to be successful." (Teacher, Vic)***

The distinctive nature of the learning approach: Entrepreneurial product-oriented learning is hands-on, involving creative thinking and iterative processes. It requires students to think and act creatively and collaboratively. Therefore, allocating sufficient time for the initiative's implementation with students was essential.

Teachers tended to create time through:

- an existing timetable structure (e.g. work experience, pastoral care or subjects, such as geography and food technology);
- an elective structure (e.g. vertical across year levels or within one year level).

> "[Teachers] need time to be able to do some thinking, to rethink their role, to get feedback around it, to work with the students around that … it's linked to their professional learning, whether it be formally through their performance development process …"
>
> **NETWORK COORDINATOR**

In one case, teachers created a new, dedicated timetabled space for students in the initiative. In another, students and teachers were released from their other school subjects for two weeks to work intensively on their entrepreneurial pursuit or product. There was evidence that principals and many teachers were thinking about the best place to embed the initiative, especially when thinking about its sustainability.

The consistently large numbers of people at the initiative's network days illustrated the schools' commitment to the initiative. But this was complex for many schools, as indicated in the following teacher quote:

> ***"We're so used to being heavily involved in the learning process, almost dictating their learning path rather than letting them set their own one and to step back and allow them that opportunity was really hard. Slowly as they saw progress and I saw the progress it was easier to let go…." (Teacher, NSW)***

Closely connected to this, therefore, was the disposition required of the teachers. Many teachers commented on this. Teachers had to be able to support students to develop their efficacy and agency through entrepreneurial learning. Many teachers said they need to feel comfortable with this approach. Where teachers were willing to work collaboratively, this disposition was most strongly in evidence.

The initiative's flexibility: The initiative did not mandate what schools should focus on or how to do so in relation to curriculum and assessment. Some teachers commented on the need to establish a clear connection to the curriculum. Whereas a number of other teachers reported it was the initiative's flexibility to innovate, and in some cases to

prototype, that was key. It meant they could make or not make, at that point in time, explicit links to system curricula or reporting requirements. The complexity of this issue is evident in the following teacher comments:

> ***"… this [the initiative] wasn't about a test, it wasn't about an assessment they [students] had to complete, and they weren't getting graded on it, so I think they were able to relax a little bit through the process and that enabled them to participate and engage into what we were doing with them. So I do think sometimes that pressure – 'I need to do well on this task or this test to get this mark' - discourages students." (Teacher, NSW)***

> ***"… with this [the initiative] I get to do whatever I want to do as long as it seems to fit with those three principles … if we keep it small and we just say, 'This is in no way connected to the other rules of how we run our curriculum, [then] we've found that it's flexible and you can stick to the ideas of what you want to do." (Teacher, Vic)***

A few teachers also noted that while parents reportedly liked the opportunities provided by the initiative at their school, some saw it as potentially interfering with what they perceived as the "main purposes of the school". This suggests that, for these parents, the purposes of the initiative were not seen as congruent with the school's intent.

Capabilities

All teachers could see benefits and positive outcomes for all participating students.

Many teachers based their remarks about the benefits and outcomes on judgements they had made during close observations of individual student or team behaviours:

> ***"… self-belief, pride, engagement in what they were doing…" (Teacher, Vic)***

> ***"… you could see the difference in terms of just their personalities and the way they hold and conduct themselves." (Teacher, Vic)***

Teachers were also using evidence of students' attendance at initiative-related forums, students' outputs from their entrepreneurial learning pursuits, and the quality of these, to highlight the benefits of the initiative (e.g. one teacher in Victoria noted that the new elective class proposed *by* students *for* students was a "sell out").

Benefits

In many cases, teachers reported the benefits of the initiative holistically, saying, for example, that it had ***"opened their [students'] eyes and opened up their world a little more" (Teacher Vic).***

At times, the benefits of the initiative's approach surprised the teachers, as one noted:

> ***"Students struggled with the 'lack of criteria' and 'lack of structure'. As high performing students, they wanted to know what the end result and product would be … they had to own their strengths and that took a little bit of time and convincing but then they started to take on and own their roles within the group." (Teacher, NSW)***

Several teachers saw the benefits for students as a progression and a deepening of learning:

> ***"The core group of students was already composed of students who were pretty confident and involved in lots of activities, but their confidence and teamwork skills had further developed, as evidenced by writing, rehearsing and performing together with peers from different year levels." (Teacher, Vic)***

The teacher findings revealed three themes relating to benefits for students:

Learning new knowledge and skills: Students acquired new skills (including public speaking), especially leadership skills, questioning skills and the ability to refine their work.

Learning new ways to work and learn: All teachers reported that the initiative's principles and entrepreneurial learning processes gave an authentic approach to developing student voice and agency.

Opening up new pathways for the senior students post-school: Some teachers cited evidence of students rethinking their post-school options (e.g. going to university, setting up their own business).

One theme emerged as a key benefit for teachers:

The initiative gave teachers flexibility: All teachers cited evidence of how they were interpreting and using the initiative's principles to guide their teaching. This was largely based on their school's existing cultural, student and curriculum contexts. All teachers cited evidence of life and learning benefits for students, but a number of teachers said it was the initiative's approach that held the key to their participation in the initiative and to getting the most out of the experience.

> "… I think the impact has been different for every kid because it [the initiative] is a bit more of a personalised experience … One thing they [the students] said was they never refined their work from English … now they're actually reviewing and editing their work."
>
> **TEACHER, NSW**

Outcomes

Teachers' identified five main outcomes of the initiative for students:

Enhanced entrepreneurial-mindedness and capacity: Each teacher, in reference to their students' particular pursuits, could point to specific examples of students' improved dispositions, knowledge and skills to be entrepreneurial in their thinking and acting.

Increased student confidence: Teachers observed students overcoming obstacles during the initiative. For example, several teachers described how some students who were previously not known for speaking up in public, were now doing so with confidence (e.g. hosting a poster session and answering questions during the end-of-initiative network forum). They attributed this to the students' participation in the initiative.

> "… she feels a lot more positive about school and it's so much more likely that she's going to leave with skills and qualifications that send her 'somewhere' she's [wanting] to go."
>
> **TEACHER, VIC**

A more positive view of school among the students (who participated in the initiative): All teachers reported students were more engaged, and provided examples of behavioural and cognitive engagement to illustrate this point. For example, one teacher pointed to a drop in student suspensions following the embedding of a personalised learning approach across the school. In another case, the teacher recalled a parent's unsolicited comment, saying how the experience had really stretched their child and had *"really given him an interest and focus in school and willingness to participate in things beyond the classroom*" (Teacher, Vic).

Changed and improved relationships between students and teachers: Many of the teachers reported that the students' voices were being heard and heeded more often. One teacher also referred to increased trust between staff and students.

Improved student agency: The teacher questionnaire responses to the seven student agency questions suggest that there was a marked difference between the extent to which students were able to exercise agency within the initiative compared to within the broader school setting. Their patterns of response were also similar across all the items. A large

majority indicated a moderate or major level of agreement with each item. In contrast, a large number (but still a minority) of teachers indicated that in the school as a whole, students exercised agency to a minor extent. For the last item – about the school having clear procedures around decision-making by students – a majority of teachers felt that this occurred only to a minor extent. These findings suggest that for most teachers, students probably had more agency within the initiative than they could expect to have elsewhere in their school.

In several cases, teachers expected students' newfound confidence and capability, and their modelling of this, to have positive flow-on effects to the students' peers. Several other teachers predicted the experiences and learning from the initiative would have a positive influence on students' decision-making in their later school years.

All teachers believed or hoped that the positive effects of the initiative for students would be long-lasting and transferable to other areas of school and life. One teacher remarked that this would be the case, as long as the school keeps valuing personalised learning.

Further evidence of this was the practical next steps all schools were taking post the initiative (see Section 9). In several cases, teachers (and principals) showed the research team curriculum planning documents and current or proposed assessment frameworks for student capabilities. They also indicated how the benefits and outcomes of the initiative fitted with these documents and frameworks.

Enablers and challenges

The findings from the teachers' experiences of the initiative and their observations of their students suggest several key enablers and challenges. These are, in many ways, similar to what teachers were saying needs to be in place for students to get the most out of the initiative's opportunities.

Another way of identifying enablers and challenges was to ask about pivotal moments in the initiative, which teachers and network coordinators were invited to recall. These moments were seen as significant because they were key turning points, for better or worse (nearly all were for the better). Most of these pivotal moments occurred at student and teacher events or forums. They occurred at school (e.g. students presenting a proposal to others at school), in the community (e.g. with parents and the public attending), or at one of the initiative's network learning gatherings (e.g. the whole of network end-of-initiative forum in Melbourne).

> "By the time these students move through, and they've done a project like this in Year 9… they can talk about working as part of a team, and working to deadlines, and under pressure, and having to be innovative in their thinking, and make those connections themselves. They're really valuable experiences that they can draw on, in terms of a whole range of learning."
>
> **TEACHER, NSW**

Enablers

The teacher findings show the biggest enablers were as follows.

The school's leadership culture supporting experimentation and an openness to learn from mistakes: Such a culture is one that provides:

> ***"… a 'safe space' to try something new and a chance to test out the initiative's guiding principles on something with 'small stakes' (like an end of year activity week), to show how things can be different." (Teacher, Vic)***

Part of this culture is an understanding of the importance of having adequate resources and time. These are needed to plan and build relationships with students and other teachers (some of whom they may not have directly worked with prior to the initiative or in the same way). Time allowed teachers to plan, modify and build strong relationships with students.

Many teachers highlighted the importance of having a leader who was committed to, and knew how to develop, new approaches to schooling:

> ***"The school also knew how to connect up experiences and opportunities from their various networks … as keynote speakers at their student days during their [entrepreneurial learning] program." (Teacher, NSW)***

Teachers with the disposition and capabilities for teaching entrepreneurial learning: Many teachers could see that for students to develop entrepreneurial-mindedness, teachers too needed to know and understand how to teach using an entrepreneurial approach. This included being able to come up with novel solutions to problems, as well as knowing when and how to offer support to students.

Many teachers described pivotal moments where they were led to rethink their role and consider how best to enable students to 'succeed'. The following typifies such a moment:

> ***"… the moment within that day was when I stepped back, because I had helped the kids a bit, but they planned it, they'd organised everything and I stepped back on the day and kind of realised I'm actually not really needed <Laughs> they're all doing it themselves. So for me, just personally, that was the moment that stood out amongst this whole journey." (Teacher, NSW)***

For some teachers, seeing external experts in action offered new ways to approach working with students:

> ***"He [Yong Zhao] modelled then what we adopted here. He modelled identifying students' strengths and getting them to be project managers and getting them to be media and marketing or research. So seeing him actually model what he expected from us was an eye-opener. I think that's where we started thinking 'Hold on, we've got to start really stepping back and allowing them to step up'." (Teacher, NSW)***

Students who are curious and interested: As one teacher observed, *"something that students are passionate about, is the greatest enabler"* (Teacher, Vic). Also having students who were willing to 'give it a go' was seen to be important. One teacher said: *"It wasn't me saying to the kids, 'This is what you need to do', it was them saying to each other, 'this is what needs to happen. Let's do this'."* (Teacher, NSW).

Dedicated network facilitation: A few teachers singled out the network coordinator role as a major enabler. These teachers saw their coordinator as playing a key role in the network, particularly in accessing information around resources and facilitating network learning.

Challenges

The teacher findings show the biggest challenges were often flipside of the biggest enablers. These findings were common across schools. All teachers reported that their school's leadership culture was supportive of experimentation and openness to learn from mistakes.

Teachers saw the biggest challenges as follows.

Teachers who do not have the disposition or capabilities (or both) for teaching entrepreneurial learning: As typified by this teacher's comment:

> "… overcoming that fear with them [students] was the hardest obstacle to overcome. The fear of failure. The fear of being judged by others. It started within the group."
>
> **TEACHER, NSW**

> ***"For staff, [the] biggest challenge is getting staff with an 'entrenched way of teaching' to take a risk and try something different. This project is very open and it's student driven – a lot of people find that very confronting … These teachers struggle to see the need for change, or the benefit of a new approach, because their more traditional style of teaching works for their students." (Teacher, Vic)***

Students who are not curious or interested: A number of teachers said this was one of their biggest (initial) challenges. The teachers gave various reasons for why this was the case. One was the potential risk of students 'cruising' through, rather than embracing the initiative's opportunities, as evident in these comments:

> ***"[Students who are] along for the ride, rather than driving it [although] this definitely changed later in the project, once the rubber hit the road." (Teacher, Vic)***

> ***"… giving students power and a voice when they've never had it, or felt like they've never had it, and are disengaged and may use this as a platform to go on [to the] fringe and do [the] bare minimum. For most students it's fine, but for some the abyss of choice is quite overwhelming." (Teacher, Vic)***

One teacher noted students' lack of engagement stemmed from who was doing the problem identification:

> ***"…we have had engagement issues for a range of reasons, and some of it is interest and some of it is because, you know, a design brief was imposed upon us, but also kids don't necessarily like operating in that mode where they have open-ended stuff. They find it quite difficult to organise their thoughts and head in a direction that they're happy with." (Teacher, Vic)***

Related to this challenge was teachers' having the required skills and a willingness to enable students to take the lead. For example:

- Encouraging students who were initially reluctant to make phone calls to organisations, to do this on their own, once the teacher had modelled this for them.
- One teacher believed professional learning within school for teachers would be beneficial *"so teachers can see the student progress and see the outcomes that students are achieving"* (Teacher, Vic).
- One teacher recommended that when students are overwhelmed by the lack of structure, teachers should provide them with more structure, more support and fewer choices, until they are feeling more equipped:

> ***"… coming to an understanding that the students needed more direction … that there was a lot of nudging. But if they were nudged, then they were more self-directed. They could be left to do something or I'd just sit there and do something else while they got on with it … I knew that eventually they would get there, but they didn't know that, so they were getting frustrated and unmotivated, and I said, 'Don't worry, it will happen. Soon, you'll come up with something'." (Teacher, NSW)***

Many teachers mentioned lack of time, the logistics around resourcing, and connecting effectively to the world outside the school as significant challenges.

Summary of teacher findings

The teachers typically understood and embraced the three principles underpinning the initiative. Their interpretations varied, and the implementation that followed also varied. This variation seemed connected to their local school context and the dispositions that the teachers brought to their work.

Teachers understood that they needed to bring an open mind to an entrepreneurial learning teaching approach, but in practice, many found it difficult to implement. Despite this, most teachers felt that the initiative exposed students to multiple and diverse entrepreneurial learning opportunities (at network workshops and at their school). They felt that their students' exposure was shaped by the extent to which the school culture was supportive of the initiative, in particular, in the time made available to them, and how and to what extent it was connected to the curriculum.

Teachers reported that their students acquired new knowledge and skills, new ways of working and learning and this helped open up new pathways for senior students post-school. Students also needed to be (or encouraged to be) curious and interested for these benefits to be maximised.

As a consequence of the initiative, teachers reported five important student outcomes: (1) enhanced entrepreneurial mindedness and capacity; (2) increased student confidence; (3) a more positive view of school; (4) improved relationships with their teachers; and (5) increased agency.

8. Principal findings

This section begins with how principals interpreted the initiative's three guiding principles. Next it provides an overview of how principals were approaching the initiative's implementation, using dispositions, opportunities and capabilities to frame the findings. What principals said were enablers and challenges to implementing the principles concludes this section.

> "At the moment the system has pretty much unrelenting focus on achieving really strong outcomes in literacy and numeracy, and to some extent more recently scientific knowledge. But unfortunately that's not going to be enough; it's actually not going to deliver the outcomes necessary for young people to be able to thrive in the future."
>
> **PRINCIPAL, VIC**

Three guiding principles

The researchers invited principals to identify what they saw as the essence of each guiding principle (see Table 6). The researchers asked this during the first interview with each principal. At the end of the initiative, principals were invited to comment on which principles they embraced and whether the principles could be adopted with any student.

Table 6: The three guiding principles and their essence – principals

Principle	Finding
Develop more personalised education experiences so each person can pursue passions and talents to excel in unique ways	Enabling student agency for immediate and future student benefits
Engage in creative and entrepreneurial product-oriented learning experiences that can in authentic ways benefit local and global communities	Opportunities to create a quality product that is of value for someone else, which could be other students
Cultivate and prototype new approaches, processes and/or products	Creative thinking and innovation, with an emphasis on entrepreneurial learning, not just its output

What do the findings show about principals' understanding and implementation of the principles?

Principle one: The findings show that all the principals firmly agreed about the importance of students being able to exercise their agency. In reference to this principle, this largely meant allowing the voice of students to be heard, with an occasional specific reference to assessment. Many principals noted potential immediate and future benefits for students when they get to exercise their agency. The most frequent themes were improving students' employability potential, life skills and learner confidence.

Many principals commented that, as yet, student agency at school or system levels was not as expansive in scope as it could be or it was not happening enough. Reflective of this view were such phrases from principals as**, "***students playing a more active role in their assessment tasks …"* and *"much more student voice in initial curriculum planning".*

It is clear, however, from the principals' responses, that schools were embracing this principle from the outset of the initiative. This is not a surprise finding when read alongside principals' motivations for deciding to participate in the initiative. Several principal comments suggest an element of tentativeness in their school's practice of this principle, suggesting it may have been 'new' territory for the school (e.g. comments included: *"… it's giving them that little bit of free choice", "get some student voice … it's a critical thing"*).

Principle two: Principals were in agreement that the essence of this principle was about the importance of quality and of products being of benefit to others, including other students. As part of this, principals often referred to the importance of creating an authentic audience for the students around what they were doing. Nearly all the audiences were local rather than global. But in all cases, the audience was described as authentic. According to one principal, this made it different and more engaging than other forms of learning for students.

Some principals noted having some difficulty with the terms 'entrepreneurial' and 'product' in this guiding principle. For these principals, the terms appeared to be related more clearly to business than education. This interpretation was for them an initial stumbling block or even a disincentive to implementing this principle. A few questioned whether "product was the 'right' word". By the end of the initiative this issue seemed to have been overcome, with schools embracing a broad interpretation of 'product' for the initiative and seeing the diversity of student 'products' during various network workshop processes and the short videos of their journeys.

Yong Zhao's mentoring also appears to have helped. He encouraged students to develop their entrepreneurial-mindedness and emphasised that this could manifest in many ways, with business related ventures just one of such way.

> "We probably focused more on the second [principle]. In the third one, we probably didn't get as far as we could have. It's very difficult to get to the point where you're able to – we prototyped for some, many of them never got as far as prototyping. They had the idea. They did some design around it. They certainly developed a lot of skills though..."
>
> **PRINCIPAL, NSW**

Principle three: The principals' discussion of this principle was quite divergent. They tended to interpret the principle in reference to their school's context (e.g. the school's approach as itself a prototype, or by applying this principle to guide the development of students' key entrepreneurial learning skills, such as the generation of new ideas). The findings show the principals' discussion converged around the formative nature of the experience and on doing something new. But the language of 'prototype' appeared to be less familiar to some of the principals.

What was influencing the schools in embracing the three guiding principles?

School context: Principals from a few of the schools reported that their school had covered all the initiative's three guiding principles. Typically, however, the findings suggest that schools had a stronger focus on one or two rather than all three. The school's context, including its culture and students, was a key driver of this decision by principals.

Where a school's focus was on one principle, it tended to be the first, related to personalised education. Out of the three, the first principle seems to have been the most familiar in language and purpose. The network coordinators drew attention to the importance of the local school context in shaping how this principle could be applied. Many of the schools had an existing strong track record and evidence of this principle as a priority and practice. For example, they already use project-based learning as a key pedagogical approach, and/or they develop and monitor individual learning plans for *all* students, and/or the schools have created structures for various student interest based gatherings (e.g. clubs).

> "The school made the three principles 'their own'. To fit the context of a new and growing school and what the kids actually wanted to do."
>
> **PRINCIPAL, NSW**

Where the first principle was in place at the school, or well on the way to being established, the second and third principles were more of a focus. The findings suggest that strategic attention to the first principle influenced the extent to which the second and third principles were a focus.

Principal commitment: The findings show that the dispositions of principals (e.g. open-mindedness) and the opportunities they created for teachers and students in the initiative (e.g. enabling a timetabled structure for students and teachers to plan and implement their ideas) influenced how the school approached the principles.

> "… trying something different and showing that 'openness' to teachers who may find it hard to let go."
>
> **PRINCIPAL, VIC**

Dispositions

The findings show that principals believe they needed to bring a number of key dispositions to the initiative to get it going, keep it going and for it to be of value to students. These were often seen as foundations that needed to be in place.

All principals remarked that an important disposition to have was a mindset that was open to change. This could be seen in a willingness to try new things, learn from mistakes and adapt. One goal of such an approach would be, among others, to support teachers to extend what teaching the curriculum could look like. Principals with this disposition in well-established schools in the initiative often had a long-standing track record of having, and being known for, an innovative outlook, embracing new thinking and experimenting with new ways of doing schooling. There was evidence in strategic school plans, curriculum documents and their entrepreneurial learning journey videos of these principals making strategic connections with experts and organisations beyond the school, bringing additional expertise into the school to work with, and alongside, students and teachers, and using school-based data to inform decision-making. One principal thought being in a new school made it easier to try new things because there is a cultural 'permission window' to do so: *"if they don't work, then you can just go, 'well, let's try something else'…"* (Principal, NSW).

Closely related to this disposition was a growth mindset (see the list of terms at the beginning of this report) for the positive development of the school and learning. One principal, elaborating on this, said they believed that a growth mindset was a school governance issue (Principal, NSW). Establishing this foundation required the school to examine its operations and procedures as much as look to the teachers to take the lead in implementation.

Another foundational disposition was a belief in students and what they can achieve. This disposition was seen as founded upon a close and trusting relationship between students and teachers. Such a relationship was seen to encourage students to express ideas. Illustrative of this view was this principal's comment:

> ***"They [teachers] need to be happy with letting the students just get on with 'it' and be happy no matter where 'it' ended up." (Principal, NSW).***

Willingness to take a risk and, more specifically a willingness to be challenged, was another key disposition identified by most principals.

Opportunities

The principals considered the greatest opportunity provided by the initiative was for authentic learning and collaboration, especially with other schools, but also within their schools. This was evident in the issues students were focusing on in their projects. This learning, and especially this collaboration, was important for teachers and students, but was most commonly described as a benefit for the students. The circumstances of this learning were important; this was learning that supported students to take responsibility for their own learning.

> "… a willingness to listen to students. I think that's a critical aspect. And then a willingness to act, to follow through on what they're saying."
>
> **PRINCIPAL, NSW**

What is influencing the opportunities given to students?

All principals put forward a number of suggestions for how students could get the most out of entrepreneurial product-oriented learning opportunities. These varied in their importance across the schools, highlighting again the influence of school context on decisions. A key theme emerged:

> "… a willingness or a desire or passion to explore new ways of learning, and not to be afraid."
>
> **PRINCIPAL, NSW**

The importance of a supportive school culture: All the principals reported that their commitment is essential, as it affects the type and quality of opportunities students and teachers get, the school's approach and the school's evaluation of it during and after development. The importance of principal commitment was also noted by the network coordinators:

> ***"There needs to be really broad acceptance that involving students in projects like this, where they are the leaders – it's their voice that directs them, and they are the decision-makers – actually stands them in good stead, not only for an exam … but for life. It's marrying those two that needs to be 'sold' more explicitly to leaders … so that provides the ideas and the language for them to then 'sell' it to their parent body and their community." (Network coordinator)***

Principal commitment manifested in three ways:

- Getting 'buy in' from staff and from the wider school community;
- Articulating alignments between the school's vision of schooling and the three guiding principles;
- Putting in place the necessary resources and timetabling to allow the culture for this approach to develop.

> "We think this is a life changing experience for those students, and I think it will colour their learning no matter what year they're in."
>
> **PRINCIPAL, NSW**

Due to the different local contexts, expressions of these commitments were not equally needed or reported. It is clear from the responses that principal commitment, however it manifests, is an essential pre-requisite and an ongoing priority:

> ***"It has to be made a priority at both the leadership and teacher level … and remembered that it's a priority, not just at the time of 'let's go and do it'." (Principal, NSW).***
>
> ***"The principal doesn't have to run it, but if the principal's not part of the design team, if the principal doesn't authorise and give their imprimatur to the funding, the support, it won't happen." (Principal, NSW)***

Capabilities

All principals noted positive benefits and outcomes for all participating students. In making these claims, principals used various forms of evidence. Principals were directly observing students and teachers at school (and for some, during the network gatherings) and of students' outputs from their entrepreneurial pursuits (including the students' three-minute video of their entrepreneurial journey story). They were noting visible shifts in some of the behaviours of the participating students. Principals evidenced this with examples of students doing and saying things that were not observed prior to the initiative. Some principals made explicit reference to their school's evaluation and review processes and documents (e.g. student and teacher assessment tools they were developing and using, such as creative thinking teacher rubrics, student digital portfolios).

There is evidence in the language of the principals' responses that the essence of the three principles were connected to a bigger and broader agenda for the school around education.

Benefits

Principals identified the following benefits:

Learning new knowledge and skills: All the principals identified that students were learning new skills or deepening their skills, especially related to public speaking and communication more generally, or in work and enterprise skills (e.g. skills as researchers and story-tellers). With this confidence, principals noted, came more student willingness to take up leadership roles.

Learning new ways to work and learn: Students in the initiative working more collaboratively and creatively with their peers and teachers (co-creating and working in small groups, often with those they may not have had any connection with prior to this initiative).

Developing an expansive mindset: Several principals pointed to students in the initiative expressing comments reflective of a newfound expansive mindset of learning (e.g. students identifying new work options and new understandings of different perspectives in the world and students' schooling). Several times principals commented on the initiative's experiences opening up students' eyes. Along with this, one principal discovered students' talents (drawing). This principal said this talent would have remained hidden if not for the initiative's approach.

> "If you can make a difference in the life of someone, then you're doing something. It doesn't matter if it's only five or six or 10 [students] or, you know, it's still making a difference for those kids and it wouldn't have happened without the program [the initiative]. I'm confident it would not have happened without the program. Those kids either would be at school bored stiff, disengaged, or not at school at all."
>
> **PRINCIPAL, VIC**

> "… the skills and the knowledge that they develop but, to me … it's the confidence to take a risk and to voice their ideas and I think that's going to be a big impact for the kids outside of these walls and school."
>
> **PRINCIPAL, NSW**

Outcomes

All principals could provide evidence of positive student outcomes. Taken together, these themes emerged:

Increased student confidence, self-efficacy and sense of agency: This was a common theme across the interviews. Illustrations of this provided by principals match those provided by teachers. One of the most common examples was

noting students who had previously avoided speaking in class or in public now possessing a set of tools and experience to better communicate with a larger group of students and/or to the community.

Principals also noted observable differences they attributed to students being able to pursue passion projects. These students were demonstrating deep thinking about a topic because they were driving their own learning and what they got out of it:

> ***"They're [students] ... hanging on the fringe, which makes sense because they haven't 'fit the mould' for regular schooling, so to see them develop confidence, to be able to show their strengths and passion has been amazing." (Principal, Vic)***

A more positive view of school among the students: Four schools drew particular attention to this outcome. They could see demonstrations of this from students who participated in the initiative (and not necessarily among other students in the school). Evidence of this were students joining clubs or the school's Student Representative Council (SRC); and students commenting on their progress, citing their attitudes to school and their willingness now to get involved in things. One principal observed that students appeared happier and more comfortable at school through having greater ownership of what's going on:

> ***"I think from the students' perspective they would say that, 'Well yes, you know, I talk to people in all year groups now and I can walk out into the playground and people will know me and talk to me or I can go up and talk to them'." (Principal, NSW)***

More resilient approach to learning: Two schools made specific, unprompted observations in reference to students' more resilient approach to learning. One principal said students are now, ***"fleshing out ideas" (Principal, Vic).*** Another observed that students who had participated in the initiative were now able to:

> ***"… stick with things … to find solutions … to be resourceful. When they have those skill gaps, who do we go to, what skill gaps do we have, who can I ask, how can I get that information or that skill base?" (Principal, NSW)***

Improved relationships between participating students and teachers: Some principals noted the initiative's approach enabled much more collaborative work for the students *with* their teachers than before. Illustrative of this was the observation:

> ***"… they [students] started to see that traditional teacher, student role start to evaporate and the fact that they actually identified their skillsets that they had been developing. But they could also identify the skillsets that the other people in their group had, and how that led to that end product." (Principal, NSW)***

Some cohorts of students still needed more assistance than others to develop their collaborative capability, not with teachers, but with each other:

> ***"Most of the time I could let the kids work independently for a period, but sometimes they got nothing done because they were just sort of infighting. You know, 'my idea's better than your idea sort of thing'. So we had to find ways to make them share and collaborate … We separated the jobs and that helped … So that was you know, a case of 12 year olds and 13 year olds needing a teacher to step in and give a bit of direction in this situation." (Principal, NSW)***

On matters of sustainability: Nearly all principals predicted that the effects of the initiative would be long-lasting. The rest couched their response to this question in terms of a belief or hope that this would be the case, but that it was too

early to tell. The findings highlight that principals had, or were intending to, put in place steps to embed entrepreneurial learning in their school (see also Section 9). They saw this as their role to lead within the school: *"I think that's probably our job to make sure that it's lasting and that it goes beyond just those - just beyond those kids"* (Principal, Vic).

All principals could clearly articulate the initiative's connection to their school, and in some cases explicitly to curriculum and assessment developments or programs (e.g. developing work and enterprise skills by the end of Year 10, with work experience in NSW a mandatory Year 10 subject; or in specific subject areas, such as STEAM; or through extra-curricular activities or the school's wellbeing priority or pastoral care program. Where explicit curriculum connections were already being made, this was usually through references to developing student capabilities in the school's strategic plan.. One principal remarked that the opportunity to intentionally experiment outside the curriculum is what attracted their school to the initiative, and enabled their participation.

One principal, from a school with a high ICSEA score, remarked that some parents wanted to know more about the initiative and were asking why their children were not involved in it.

Another principal concluded the following from the initiative's network gathering and processes:

> ***"When in Year 12 you [students] write in your year book what's your most memorable thing that you've done at school. I would say the kids who went to Melbourne that will be their most memorable experience. Those Year 8s who are going to get their idea to be made into a business … even the kids who have been the 'fringe dwellers'. The excitement that they have around seeing their work showcased and seeing their opinions valued makes me feel very sure that they will say that." (Principal, NSW)***

Enablers and challenges

Enablers

The principals and network coordinators identified three main enablers required for the initiative, as follows.

Drawing on the networks' diverse expertise: Many principals mentioned in various ways how drawing upon and effectively using the diverse expertise and networks of others in the initiative enabled the entrepreneurial pursuits in their schools. They reported this to mean other network schools, network coordinators, students and the initiative's partners; and to use these opportunities to learn from their experiences of the initiative. Network coordinators also strongly emphasised this attribute of the initiative as a key enabler in respect to doing their role:

> ***"It's the willingness of the schools to give things a go, and alongside that has been for me, the Mitchell Institute structure around it has been really useful … it's more about being a part of something that goes beyond the schools themselves and is feeding into another process about policy … this enabled me to think beyond the immediate … and be part of something a bit broader has been really important for me in that respect, in my role." (Network coordinator)***

> ***"My enabler – getting to know the [teacher] coordinators quite well. None of them are my friends, but I believe that over time we developed a very good professional relationship … they were the best people in that role, and that made my job so much easier." (Network coordinator)***

Adaptive system leadership: The descriptions from principals suggest adaptive system leadership is a key enabler for this initiative's approach. They often expressed this as having a mindset that can accommodate change and try new ideas out. It is having the drive to act and take action: *"… the principal position gives you the authority to say yes or no. So saying 'yes' was probably the first, most important thing"* (Principal, NSW). It is also about having the drive to follow

through or ensure others (often students) were following through on their intended actions. Principals mentioned the importance of having high expectations and *"finding the right people with the right mindset"* (Principal, NSW).

One school principal noted the leadership bias in this initiative as a further visible acknowledgement of their responsibility:

> ***"The school has accepted its responsibility to be system leaders … We so want the students to be able to have this opportunity … Why can't innovation be part of what government schools do? Our kids need to see kids from other schools, and they need to work with them, and they need to get outside their frame." (Principal, NSW)***

This leadership represented the principal, the teacher or core group of teachers, and students taking responsibility for the initiative in their school:

> ***"You can't do any of this without a really good team of teachers, so they need to help guide, not dictate where the students' thinking's going … For this sort of work you really have to co-create with the student to make it engaging and really authentic … student voice is the most important, then the teacher facilitator, then that teacher facilitator being curious and a researcher themselves." (Principal, Vic)***

Adequate resourcing: The third important enabler was having adequate resourcing - both time and money. One school noted that big costs would have been a disincentive to their participation.

Challenges

There were two main challenges with associated sub-theme challenges. Two of these were common to many of the schools: teachers knowing how to support students through an entrepreneurial learning approach (and in some cases mindset); and finding time among competing demands for staff and students.

Teaching entrepreneurial learning: This finding was common to many of the schools. Some principals identified this as *the* main area of skill shortage and mindset shift for some teachers across their school, as evident in the following comments:

> ***"… some teachers finding it hard to take a step back and watching students make mistakes, especially when they're used to being the knowledge transferrers. Important to have some professional learning around the mindset that teachers don't need to fix everything, they just need to make sure they're engaged and sage. But let them [the students] co-create something that might not work and go back to the drawing board for a little bit." (Principal, Vic)***

> ***"It's going to take a whole shift in thinking by teachers … teachers find it really hard to let go. They want to direct all the time, and it's a real mindset change, and I think they feel like they're not doing their job unless they are directing everything and really structuring everything very tightly, so everyone gets the same bit of learning and the same outcome, whereas I think it could be a much richer experience this way." (Principal, NSW)***

> ***"Whilst I supported the teachers as much as I possibly could in and out of the classroom they really didn't understand the learning model. They didn't understand this new way of thinking." (Principal, Vic)***

One principal said they would notice this was improving if, as an example, teachers were not directing everything and were instead asking better questions, so students had *"a chance to fly and design their own learning"* (Principal, NSW). One other principal said that the origins of (and solution to) this issue stems back to teacher education practices:

> ***"… we're not always putting our student teachers with the most innovative teachers and the ones that take the risks because that's probably what they need to be exposed to …" (Principal, Vic)***

Creating the time for entrepreneurial learning: This manifests for schools as finding time among many competing demands on staff and students or, in a few cases, realignment of roles because of staffing changes at the school. Or in several other cases, with the benefit of hindsight, realising the need to plan earlier for staff time release.

Related to these two key themes were these associated sub-theme challenges:

Clarity about purposes and processes: Several schools commented on it taking them some time to identify 'how' to best make their entrepreneurial learning pursuits and the approach work for them. They knew the 'what', but it took time to get a framework and processes for the 'how' in place. This resulted, in one case, with some trial and error at the beginning (e.g. starting with a whole cohort, then narrowing down to small group of 8 or 9 students). Other principals pointed to the challenges of being able to respond quickly and with quality to new ideas (e.g. the entrepreneurial learning journey student films). One principal said if they had known this was going to be introduced, then they would have been better able to mobilise the school's alumni to assist.

Level of technology skills required by staff and students: Some principals noted this skill's gap for staff and students because of the entrepreneurial learning pursuit the students had chosen and/or because of the initiative's introduction of the short film to be produced by students and shared at the finale whole-of-initiative forum. These new skill requirements introduced challenges for staff and students to overcome:

> ***"The skills to create a website, most of those students wouldn't have had it, so they would have had to learn a new skill. Some of those students wouldn't have skills in filming, so they'd have to come up with another skill. The staff assisted them and we brainstormed but we also looked at other students that might have those skills and tapped into their skills and experiences and provided some opportunities for them to learn." (Principal, NSW)***

Cited once each were the challenges of coordination, especially with external groups and the duration of the projects, which created a level of 'burn out', especially among some students.

Summary of principal findings

The principals understood the three guiding principles of the initiative. All principals strongly agreed that principle one referred to the importance of students being able to exercise their agency. Principals were in agreement that the essence of principle two was about the importance of quality and of products being of benefit to others. The principals' discussion of principle three was quite divergent. Principals tended to interpret principle three with reference to their school's context.

The uptake of these principles seems to have been influenced by two factors. The first was the school context. Principals from a few of the schools reported that their school had covered all the initiative's three guiding principles, but typically the findings suggest that schools had a stronger focus on one or two of them.

The school's context, including its culture and students, was a key driver of principal decisions. Where a school's focus was on one principle, it tended to be the first, related to personalised education. Strategic attention to the first principle influenced the extent to which the second and third principles were a focus.

The second factor influencing the uptake of principles was the level of principal commitment. The findings show that the principal's dispositions (e.g. open-mindedness) and the opportunities they created for teachers and students in the initiative (e.g. enabling a timetabled structure for students and teachers to plan and implement their ideas) influenced how the school approached the principles.

The findings show that principals believed they needed a number of key dispositions for this initiative: openness to change; a capacity to make strategic connections; having a growth mindset; having a belief in students; and a willingness to take a risk or, more specifically, a willingness to be challenged.

The principals saw the authentic learning and collaboration, especially with other schools, as the greatest opportunities provided by the initiative.

A supportive school culture seemed to influence the opportunities students got through the initiative. This support included staff buy in, alignment with the school's vision, and having the necessary resources.

All principals noted positive benefits and outcomes for all participating students: learning new knowledge and skills; learning new ways to work and learn; developing an expansive mindset; increased student confidence; a more positive view of school among the students; a more resilient approach to learning; and improved relationships between participating students and teachers.

Nearly all principals predicted that the effects of the initiative would be long-lasting. Indeed, all principals were actively undertaking steps in their schools to continue, and for a majority, expand (more students) or embed (more deeply) the actions and principles of the initiative. Collaboration within schools (student-student) and between schools emerged most strongly as a key aspect that was highly valued, and that principals sought to continue.

The principals and network coordinators identified three main enablers required for the initiative: being able to draw on the networks' diverse expertise; having an adaptive system leadership; and adequate resourcing.

There were two main challenges: teaching entrepreneurial learning and creating the time for entrepreneurial learning.

9. Participants' next steps and insights

Questions with a future focus around sustainability and impact were part of every interview. They also formed part of the action cycle reporting that schools were doing during the initiative, and part of their final written report to the partners.

At the end of each interview, participants also had the opportunity to comment on anything else important. Often these comments linked well to what the research participants thought was a priority and to overall insights from their experience. This section presents the findings under the headings of 'next steps' and 'insights'. It does so from student, teacher and principal perspectives, with the feedback from network coordinators integrated throughout.

> "I was struck by the diversity in the schools that were there [in the initiative] from high to low and yet there seemed to be a really consistent quality outcome, if you like, so that it had been a rich experience for all those schools no matter what background …"
>
> **PRINCIPAL, VIC**

Students

Next steps

There was not a great deal of commentary from students around how best to spread the principles of the initiative across their schools. The schools' different starting points provide one possible explanation for this finding. Some schools already had a whole-school commitment or intent to embed the principles, especially around fostering greater student choice and voice.

One student did explicitly suggest that the initiative should be extended to the whole school. Several other students, more indirectly, intimated that this would be a good next step to take.

The one student who explicitly saw a need for the entrepreneurial learning initiative to be a whole-school approach noted, however, that the competitive ethos, especially in the senior years of secondary schools, worked against this happening:

> ***"… student learning through connecting with other students. I think there's too much focus on individual learning, and I guess almost competition between students. Honestly with the – okay look I'm just going to put it all out there. With the HSC it's all about rankings, it's all about competing with your peers, and I think it's just a horrible … horrible environment to be in …" (Student, F, NSW)***

Insights

Collaborative opportunities: The collaborative opportunities for students with peers and teachers, and with students from other schools, are central themes in the student comments. The network meetings in each state, and the whole-

of-initiative gatherings (combining both state networks) were a feature in most students' comments. Without hesitation, when asked, all students saw the initiative as primarily being for them.

Most students elaborated on the value of collaborating and on the network gatherings, with most students seeing the networked learning workshops as playing an important complementary role to their own school. The following comment is typical of this view: *"Networking is important because in life you need connections for change."* (Student, F, NSW)

Across the interview groups, a number of students were excited by, and made comments on, how collaborative learning, rather than competitive learning, was much more enjoyable and effective because it helped them to see ideas to bring back into their school. Building on this view was one group who saw getting more schools at network events as being valuable. This group also saw value in holding more network meetings – even though they acknowledged that this would be difficult to organise. Some students in the other interviews also spoke of the value of having more time to talk with students from other schools.

> "… hearing the other schools' ideas and then it helped us make our ideas better."
>
> **STUDENT, F, NSW**

Flexible and accessible guiding principles: A few groups of students made explicit comments about the three guiding principles. These students felt that exposure to the initiative's principles might facilitate the spread of these principles in the school. They believed anyone could adopt the principles, if they were exposed to them, and if students could access the teacher support relevant to their particular needs.

A small number of students identified "disengaged students" as especially likely to benefit from the initiative's entrepreneurial learning focus and approach. They believed it would allow these students to acquire the skills they need, but by pursuing their own interests. Most of the students also saw the initiative as being important for teachers, the school as a whole, and for the school community (including parents).

The research team asked teachers and principals about their next steps (intended or actual). Network coordinators also responded to these questions, using their knowledge and observations of the schools' developments and plans.

Teachers

Next steps

All teachers spoke of their schools' next steps. This finding itself suggests the initiative had been of value as it indicates the schools' intentions to continue. Below are the next step themes, with illustrative examples.

> "… [teachers] definitely be there to guide the students, but, again, don't take control, let them [students] take control … everybody is still learning things, every day, so take the opportunity to learn something yourself."
>
> **STUDENT, M, VIC**

Goal statements: All teachers provided statements around what they did to become more involved in the community around cause-related needs or within the school, ***"… changing the safe culture within the school is going to be our next challenge …" (Teacher, NSW)***. Others were more to the point, ***"apply the three principles across the board" (Teacher, NSW).*** Others spoke of students taking more control, with goals to continue with 'the work' even though the particular group of students had 'finished'. Another teacher spoke of the students' plans to put a proposal together and send it to one of the entrepreneurs who the initiative's partners had connected the networks with.

Forward planning: Some teachers' comments focused on embedding this work in specific year levels. Some were planning to use Year 9 as a preparatory year ahead of full implementation in Year 10. A few teachers remarked that students in these year levels were already approaching them with expressions of interest and ideas. Others were looking at Years 7 and 8 because their data told them that this is the point in secondary school where student

engagement can wane. Teachers sounded excited and positive about these developments. Their descriptions had no hint of this being a 'drudge', quite the contrary:

> ***"I have developed a genuine interest and passion for it [entrepreneurial learning] and I think it's very, very valuable." (Teacher, NSW)***

Strategies for scaling the learning: Teachers appeared interested in scaling the learning. They offered concrete suggestions such as providing demonstrations to other staff of what the students had achieved in order to encourage further support from them, and getting a network together to solve a problem that could generate momentum as a network.

Insights

Improving student voice and agency, and social connections, along with improving teacher support were three key themes. Teachers' comments indicate that the positive mediating role of the network and its value to teachers and students is key.

Enhancing students' voice and agency: There should be a stronger focus on hearing the student voice, but then also creating an opportunity for students to exercise their agency. As one teacher noted:

> ***"We need to start with student voice, and then move to working groups and action groups …It's really about doing. And so just teaching people about having a voice, and having a say, is not enough." (Teacher, Vic)***

This suggests there is scope to grow, but there are still resistances to be overcome. For another teacher, there was a more optimistic tone. Reflecting upon the initiative they observed:

> ***"We think we're at a point where we've cultivated the soil, we've planted the seed, now we're starting to water it but we're hoping that we've become contagious and it ripples across different faculty areas." (Teacher, NSW)***

Expanding social connections: A few teachers observed that access to experts 'in the real world' and the workshops during the initiative were crucial because these offered a check-in point and helped to refocus and challenge the team. Teachers believed these connections not only inspired, but could improve students' learning transfer:

> ***"Students got Bevan's [tech entrepreneur] details … He said he'd give them some pointers. They want to use Bevan as an example in Geography because to have him from an internet perspective, but [he's] also so passionate about the Barrier Reef … he's a good example for students." (Teacher, NSW)***

Many teachers observed that more connection between participating schools would be very helpful. Related to this, a number of teachers made suggestions for more support for the teachers, either via experts, or helping shift mindsets towards more creative and collaborative practices. One network coordinator saw this as one of the big challenges for the initiative:

> ***"… getting the teachers to change the way they saw themselves in the classroom … Yong was quite strong that this is not about school teacher change, but in fact it is. It has to be. So they need support around that, and again that resource comes into play. They need time to be able to do some thinking, to rethink their role, to get feedback around it, to work with the students around that." (Network coordinator)***

Improving support for teachers: Participants found network gatherings and the people and processes within these very engaging and of value to them. To further improve the support for teachers in these social learning spaces, one teacher suggested making a small design shift in the network workshop processes. This teacher remarked that the joint learning with students was "fantastic", but time during the day for 'teacher-to-teacher' talk, 'student-to-student' talk and 'student *and* teacher' talk would be worth considering in the future. Related also to this issue, one network coordinator thought**,** *"being more than one page ahead"* of schools could have enhanced their ability to plan and therefore support the schools.

Principals

Next steps

Principals believed that developing or continuing to develop the school's entrepreneurial learning agenda was a priority. How they were going to do this and in what scope and sequence was a local evidence-based decision. In many of the comments, it was clear that leaders were using internal feedback processes to inform decision-making (e.g. student-led questionnaires; and discussions with teachers and students around what worked, what mistakes they could learn from and improve on for next time).

> "… keeping those connections with other people and seeing – that's probably been the biggest thing for me. Being new into this role and seeing and hearing how other schools are operating."
>
> **PRINCIPAL, VIC**

The leadership thinking and practices schools were undertaking or intending to undertake were as follows.

Strategic planning: A common theme was planning, especially as this relates to cultural, capacity and capability issues. One principal saw the next step as involving continued deep thinking and strategic planning around student agency, choice and voice, and deep and authentic learning and learning growth:

> ***"I think creating opportunities for maybe networks of schools to come together around a variety of activities, approaches." (Principal, Vic)***

Aligning and timetabling: In related ways, but from a school level, other principals referred to embedding the principles (or the reforms and actions pursued at the school to implement them) in the school plan, and changing structures or timetables to make their endeavours work better next time. One principal argued that in order for this focus in their school to continue, they would have to ensure that there was a team of student leaders. Another principal saw building staff capacity as the important next step. From seeing what other schools in the initiative were doing through different elective configurations (e.g. cross-year level, interest based), one principal thought creating a dedicated intensive immersive elective program for students, co-designed with students, was a great way to embed the guiding principles from the initiative in the school's timetable next year. This principal had committed staffing to enable this embedding and extension work.

Enhancing student voice and agency: Connected to this thinking and planning was an observation from a network coordinator. They thought a greater focus was needed by the schools on genuinely hearing the voice of students in important parts of the school. This may mean thinking about how best to change the school culture to enable this to work effectively. Illustrative of this happening is the change to one school's leadership structure. They are replacing the traditional SRC structure with student and teacher teams focusing on creativity and innovation, social, environmental and school-related promotions. This is not only a structural change, but a change that the principal thinks will also enable different teacher and student relations to develop – *"It gets the teachers working with the kids as well"* (Principal, NSW).

Insights

A strong and recurrent theme was the value created for participants from collaborative opportunities and connections. The origins of this initiative (collaboration and innovation) were not lost on a number of the principals (see Section 8). Elaborating on this theme were the following sorts of reflections from principals.

Fostering innovative collaborations: One principal suggested creating opportunities for networks of schools to come together around a variety of activities and different approaches. Earlier interviews, at the start of the initiative, indicated that the need to connect meaningfully with other schools was seen to be important. This was being advanced as a way of 'sharing the load', especially for smaller or resource-stretched schools, as well as sharing ideas.

Some principals believed increasing the networked connections between the schools would be a useful way of increasing effectiveness. This would be achieved because schools would be talking more to each other and, consequently, learning a lot from each other. Another school suggested that a lot had been learned through the initiative, and that those schools that had participated in it could become 'seed schools' in new networks through which these learnings and associated experience could be distributed. The evidence from the research interviews on this initiative indicates that when schools work in innovative collaborative ways, the outcomes are positive.

Dedicating network leadership and feedback roles: Network coordinators need to spend time with the students, and to work individually with the schools. Obtaining feedback from the students was seen to be very important.

Schools leading system change: Changing well-established thinking and actions to adopt new and more expansive approaches to schooling was another theme. System issues around curriculum, teacher development and the practical insights from implementing the initiative were the main topics of these comments.

New approaches to schooling: One school indicated that the initiative represented a new and better way of approaching schooling, but would require long-term planning to implement. Other schools made a similar point, indicating that the need to cover every 'dot point of the curriculum', plus the over-emphasis on ATAR scores, meant schools would face significant obstacles in extending the initiative. For this school, it is not just the attention on the ATAR, but the emphasis in the broader curriculum. While content knowledge is important, schools are seeking alternative ways to provide schooling and to expand the opportunities available to students.

There was some evidence that it is possible to circumvent the demands of ATAR scores. One school was directly negotiating with a local university to adopt admission procedures that were linked to work completed by students without requiring an ATAR score. Another school, however, did not see these demands as insurmountable, and believed that the initiative could be extended within the school without abandoning what is currently in place for the senior students. Possibly, local context is an important driver in responding to this issue – school size, resourcing levels and leadership capability - especially as this relates to understanding and applying data, learning and how to partner for impact.

Improving support for teachers: One school suggested that teacher development needed to be emphasised more if the initiative was to be extended.

Practical planning and resourcing implications:

- A number of schools pointed to the large resourcing requirements of the initiative, and the need for these to be given consideration if the initiative is to be extended. Part of this issue is developing a trusting relationship between the schools and their key partners and mentors for their actions. Conversely, members of a Victorian school said that the small time and small financial commitment for this initiative enabled their participation.

- It should not be forgotten how busy schools are, with many competing priorities and activities. This can impact particularly on school leadership, and this would need to be factored into thinking about any future developments arising from this initial initiative. This workload can also impact teachers and their ability to respond and contribute.

Summary of participants' next steps and insights

Participants' insights and their views about potential next steps provide an indication of improvements that could be made.

Students commonly felt that collaborative opportunities with peers and teachers, and with students from other schools, were central to their experience of the initiative. Most students saw the networked learning workshops as playing an important complementary role to their own school. Many of the students in the initiative enjoyed its collaborative approach to learning (compared with the competitive learning traditionally seen in schools). They felt it was much more enjoyable and effective.

Teachers saw important next steps as improving student agency, increasing student social connections and improving teacher support. They saw improving connections between schools as a way to do this. They also suggested that goal statements could be refined or elaborated upon, especially in the light of experience with the initiative. This would then make it easier to embed the work in specific year levels, something they saw as important for sustainability.

Principals typically saw the next steps as involving thinking and planning, especially around cultural, capacity and capability issues. They also saw value in the collaborative opportunities and connections provided by the initiative. Next steps, for the principals, typically involved developing a more coherent connection to the curriculum and planning, especially around resourcing.

10. Discussion

This section compares similarities and differences across the student, teacher, principal and network coordinator findings. It considers the evidence about what's working, what's not, for whom and in what circumstances. Opportunities, capabilities and dispositions frame the discussion. The section also provides a discussion of what the findings identify as key similarities and differences between the school networks.

The two school networks

The schools and students came from all socio-economic backgrounds and geographical contexts, and their enrolments ranged from 200 to 1,400 students. About half of the schools in the NSW network and a third of the schools in the Victorian network had ICSEA values below 1,000.

Decision to join: Schools in both networks decided to join the initiative because of its potential to help address what they saw as gaps in current approaches to schooling, the opportunity to try a new approach, the flexibility of the initiative's three guiding principles, and the collaborative learning opportunities that a networked-learning structure offered. All the schools self-selected and made a financial contribution to their participation in the initiative. They were at different starting points and stages coming into the initiative - some were taking their first tentative steps towards transformation and innovation, while others were seeking to refine and enhance existing school-wide approaches.

Network coordination: Each network had a network coordinator providing continuity of contact and support for the schools and partner organisations. Both were chosen because they were experienced educators, immediate past former government secondary school principals and actively engaged with schools. Both already knew many of the schools in their respective networks.

Network model: The network models in each state were not identical. They emerged from each network's distinct context. (Refer to Section 2 for details.)

Both networks of schools committed to interpreting and applying the initiative's three guiding principles. They set up and self-directed their own school action teams, comprising students and teachers (and in some cases deputy or assistant principals). All schools committed to supporting students to identify an issue or problem the students cared enough about to do something (e.g. addressing lack of school spirit; a social or community need; rethinking work experience or student assessment). The solution was their product. All schools supported students to produce a three-minute video of students' entrepreneurial learning journey to-date.

Workshops: Each network ran three workshop gatherings for the school action teams of students and teachers. In many cases, deputy/assistant principals and principals in each network participated in these forums too. The initiative held a final joint network celebration and showcase of learning across the networks in Melbourne. Alongside these forums, all schools put in place further connections and opportunities for students.

In Victoria, schools were encouraged to bring students along to the workshops from the outset, with about four students attending. In NSW, schools were expected to bring students along, with about 30 attending. In both cases, Yong Zhao used the workshops to engage directly with the students, modelling how to frame questions and engage

student voice in discussions about schooling. Both networks ended up with consistently large numbers of students at the networked learning workshops.

In both networks, workshop forums provided spaces for the school teams to generate ideas, 'test' them with peers and, if needed, change direction. Each network coordinator consulted with the partners, Yong and the schools to identify the dates for these workshops. Network coordinators co-designed the network workshops with the partners and research team, using school and partner feedback from the previous workshop to guide the focus and processes for the next workshop.

Network governance: A major principal association in each state teamed up with Mitchell Institute. The partners created an MOU to guide and monitor the collaboration, emphasising the shared values of the collaborators. Partner meetings were regular, but only as needed. This flexible approach did create some scheduling difficulties for the members because of the state's different school term dates and, for some members, school commitments. Meetings were inclusive of the research team members and network coordinators who brought different and direct feedback from schools to inform partner decision-making.

Opportunities

Students in the action teams embraced the opportunities offered by the initiative. Many remarked they had never before been offered such opportunities, or so much control, and while this was daunting at times, they were proud of how they were able to rise to the occasion.

All students felt that the initiative exposed them to multiple and diverse entrepreneurial learning opportunities at the network workshops and at their school. Most teachers felt the same.

All students saw they best acquired benefits from the initiative when they got opportunities to collaborate regularly with their teachers or other experts from inside or outside the school, and had an authentic audience (often in cross-age settings). Similarly, the principal findings show that it was the initiative's authentic learning and collaboration, especially with other schools, as well as within their schools, that provided the greatest opportunity for students and schools.

All schools found it necessary to set in motion complementary and additional opportunities for students, such as processes to assist students in developing and experimenting with ideas. The schools used different techniques to scaffold student learning. These included students working with external experts from and beyond the local community, student self-assessment using a rubric developed by a teacher on social and emotional capabilities, presentations/pitches, public showcases, regular meetings, and Socratic questioning and modelling. For example, two schools in the Victorian network initiated and co-presented a session on the initiative to a conference of 120 school leaders from outer Melbourne and regional Victoria. And in NSW, the network of schools engaged the expertise of groups specialising in design thinking methodology to deliver a workshop for their teachers.

Many of the schools used some form of elective structure or club to conduct the initiative. This gave the initiative a framework but allowed for greater flexibility and the option to connect or not to curriculum and assessments. The extent to which explicit connections to curriculum were being made varied depending on the school's starting point for the initiative. The three principles guided the initiative. Each school's context, including its culture and students, largely determined which principle the school chose to focus on. Principals from a few of the schools reported that their school had covered all the initiative's three guiding principles, but typically the findings suggest that schools had a stronger focus on one or two principles. Where a school's focus was on only one principle, it tended to be the first principle on personalised education.

The level of principal commitment was also a key. Teachers in both networks saw this to mean the school had a culture supportive of experimentation and an openness to learning from mistakes. The findings show that the dispositions of principals (e.g. open-mindedness) and the opportunities they created for teachers and students in the initiative (e.g.

enabling a timetabled structure for students and teachers to plan and implement their ideas) influenced how the school approached the principles.

Capabilities

All participants could identify and support with evidence a wide range of benefits and outcomes from the initiative and their experience of it. Nearly all the principals predicted that the effects of the initiative would be long-lasting.

All teachers, students and principals could see that the initiative's experiences had life and learning benefits for students, but a number of teachers and one principal said it was the initiative's approach that held the key to them getting the most out of the experience. In both networks, these people remarked that it was the creative freedom to deliver the curriculum in a different way that allowed them to get the most from the experience.

Students could see benefits in the immediate and longer-term flowing from their participation in the initiative, including learning new knowledge and skills and ways of working and working with others, especially other students. Principals and teachers noted similar benefits, with principals also seeing the benefit of students developing an expansive mindset. Teachers thought the initiative helped to open up new pathways for senior students post-school. Teacher findings also showed their belief that, for these benefits to be maximised, students also needed to be, or encouraged to be, curious and interested.

Students reported many outcomes. Among the more commonly reported were: increased confidence, especially in the face of adversity; a more resilient approach to learning; increased connections to the community and a better understanding of it; a more positive view of school; enhanced entrepreneurial-mindedness and capacity; improved relationships with teachers; improved collaborative capability and empathy; and increased agency.

As a consequence of the initiative, teachers reported five important outcomes among their students: enhanced entrepreneurial-mindedness and capacity; increased student confidence; a more positive view of school; improved student relationships with their teachers; and increased agency. Principals noted similar outcomes.

A lack of time, often associated with competing demands from other parts of the school (e.g. coursework, homework and assessments for other subjects), impeded the development of student benefits. Another obstacle was the slow development of how to create and be part of a team in some schools. Some students in both networks remarked on this. The findings showed that this was more of an issue for students collaborating with their peers than with their teachers.

Dispositions

Participants reported that it was important to bring to the work a disposition most commonly described across the three groups as an 'open mind' or as a 'willingness to take a risk and act'. Principals reported that a belief in students was crucial. Teachers understood that they needed to bring an open mind to an entrepreneurial learning teaching approach, but in practice, many found it difficult to implement.

The findings indicate that students were developing entrepreneurial habits of mind. When asked to give advice to future students, students from all the schools stressed the need for them to take up opportunities to exercise agency and control over their decisions, learning and activities. Perseverance and risk-taking were also seen as important attributes for students, preparing them for post-school lives. There were also calls for future students to be creative, work collaboratively and to use every chance to build their (self) confidence. Importantly, the students often framed setbacks as learning opportunities rather than as failures. They recommended this view to future students.

Students' advice to teachers also reflected an entrepreneurial habit of mind. Commonly they advised that teachers ought to pay more heed to what students were saying and to "step back" and allow them to exercise more agency. Some students wanted to see the curriculum adapted so that their exercise of agency was made more congruent with

the core purposes of the school. Often implicitly, and occasionally explicitly, the students were asking teachers to trust them more; this is in effect was a call for student and teacher relations to be revised and rethought.

Lessons learned from the initiative

The following aspects of the initiative appear to have worked well:

- First, the origins and establishment of the collaboration sprang and were sustained by the teaming of two major state principal associations, a policy institute and its existing relationship with international scholar and provocateur, Yong Zhao, and 21 schools prepared to recognise and accept their responsibility as system leaders.
- Second, the networks formed voluntarily, as did the collaboration between the partners. This resulted in a diversity of schools from different backgrounds and geographic contexts.
- Third, principles, not a fixed program, guided the work of the initiative. This gave schools choice and flexibility. It gave the opportunity to support multiple ideas and approaches at once. This resulted in an adaptive leadership disposition and practice for the initiative.
- Fourth, and perhaps most unique, was that the initiative was self-directed, with students as active contributors in school action teams at every network gathering.

Other specific strengths of the initiative were:

- All groups reported that the broad appeal and applicability of the initiative's three guiding principles was a design strength of the initiative. There was evidence of the principles engaging those students who were already pre-disposed to leadership, but also evidence of the principles working well for engaging students who were at risk of leaving school early. Some students thought the initiative was especially beneficial to disadvantaged students because it allowed these students to follow their interests and see what they were capable of.
- Student and teacher networked-learning structures and processes suggest that what was good for students appears to be good for teachers too.
- School action teams drew together different year levels, different talents, and adults and students side by side.
- Public benefit was apparent. The students were responding authentically to social issues and providing effective responses, sometimes more effectively than seems to have been recognised by teachers or parents.

The following aspects may require some modification in future designs:

- The principles guiding the initiative need to be explored coherently and defined to enable a fuller and deeper understanding by all the participants. While examples from around the world helped, it seems school teams found it most useful to hear and see each other's ideas and actions. Understanding was also helped when schools and the network partners put in place access to additional expertise (e.g. hands-on film making workshops). Finally, knowing how to bring concepts within the principles to life, such as prototypes, through the explicit development of knowledge and skills greatly helped. For example, the host school in NSW brought in complementary expertise to run design thinking workshops for school teams in the NSW network. This provided a framework and processes for the work students were doing in the initiative and that teachers were seeking to enable. Had these modifications been in place, this may have accelerated understanding of the principles and possibly increased the entrepreneurial 'boldness' of the work students undertook.
- With the exception of the global aspect in principle two, all the principles were embraced. But, the emphasis on principle one by many of the schools suggests that the extent to which principles two and three can be embraced is dependent on the extent to which principle one is understood and adopted in schools.

11. Conclusion

The research presented in this report contributes to our knowledge of developing entrepreneurial-minded students, and increasing student participation and agency, in different school contexts in Australia.

Addressing the overarching questions

To guide the research, the team asked three overarching questions, each addressed as follows.

1. What do students notice that helps, limits or prevents them from being entrepreneurial-minded?

What helps?

Students best acquired entrepreneurial-mindedness when they collaborated regularly with their teachers or other adults, and had an authentic audience (often in cross-age settings).

Students want teachers to "step back", but not to "sit back". Crucially, this meant reframing the relationships between students and teachers from a teacher-dependent to a teacher-enabled relationship.

When students and teachers saw progress, they more easily developed and sustained their entrepreneurial mindset. This was aided by a fourth guiding principle (or a component to add to the current third guiding principle) of "show me, don't tell me". Enablers for this included Yong Zhao showing entrepreneurial learning examples from around the world and practical hands-on learning experiences to assist students in telling the story of their entrepreneurial learning journey. Students also benefitted from knowing they had authentic audiences for their products and opportunities to propose and present their ideas to these audiences.

The evidence suggests that 'agency thinking' and acting for entrepreneurial-mindedness was accelerated by the structure of the networked learning. Students were learning from and with other students in other schools, but doing so in collaboration with their teachers – not as a one-off, but as a deliberate and ongoing design feature of the initiative. This opportunity was enhanced (sometimes out of an identified gap in the initiative's design) with school initiated additional opportunities for students. These were often organised by the principals and teachers (e.g. student-centred learning frameworks and processes, such as project-based or problem-based learning or frameworks).

What limits or prevents entrepreneurial-mindedness?

A lack of time, often associated with competing demands from other parts of the school, and the struggle some students faced in knowing how to create and be part of a team, occasionally impeded the development of entrepreneurial-mindedness.

While committed to the notion of "stepping back", teachers admitted that they sometimes struggled with it; just as students said they did.

Negative emotions from students and teachers, such as fear, are the antithesis of creating learner confidence in being entrepreneurial-minded. It seems that for students and teachers, current curriculum conditions can be anxiety-producing and antithetical to embracing entrepreneurial learning. Of note from the evidence is the negative impact of schooling's high stakes testing focus; emphasis on content over experiential and learner-centred teaching; and the

normative cultural pull these conditions have on some students, their parents and teachers. Some teachers feared being judged as not doing their job or not doing it well enough.

2. What do the adults and students do in the networks to develop students' participation in entrepreneurial learning experiences, and what constraints do they encounter?

Developing student participation

Different roles combine to set students up, and encourage and support them to be more self and team directed in the work of adopting an entrepreneurial mindset. Teachers and principals with this disposition created a flow-on effect, boosting the creative learner confidence of students and relationships with them. The school's leadership culture also supported experimentation and an openness to learn from mistakes.

The three guiding principles provided opportunities for students to explicitly develop, practice, apply (in different curriculum and life contexts) and demonstrate their learning. Connections to curriculum appeared to be loose for most schools and, in some cases, intentionally so because of the initiative's potentially disruptive effect before it's intent and benefits were fully understood.

Seeing progression was a common theme in the findings. This was a key motivator and enabled participants to see what they needed to adapt, and where they might need to pivot or supplement the learning or scaffolding for students or teachers.

A deliberate design feature of the initiative was the direct and continuous joint engagement of students *and* teachers as learners. The partners and network coordinators saw this as a distinct feature because, typically, professional development is with teachers only. The principles of the initiative promoted a different social learning relationship between students and teachers. They were learning together. They were learning with and from each other. Some teachers admitted that this was, or was initially, a challenge for them, as it was for some students.

The important mediating role of the networked learning structure, of people and of processes is a key finding. This was a powerful design feature of the initiative for three distinct reasons:

- First, students and teachers learned together from the start of the initiative and this was consistent across the two networks. A key enabler for this was the explicit presence of principals and executive team members at key points in the initiative. This visible indicator of commitment would prove essential to ensuring teachers and students had the resources and freedom needed to proceed. This was particularly important as additional expertise or teacher and student release from classes was needed, especially to work on the three-minute videos of their school's entrepreneurial learning story. The teachers and principals reported that network coordinators provided important continuity, connections and support for school action teams. The initiative's partners' decision to appoint two former (and highly regarded) principals to these roles, both of whom were also currently working with a number of the schools independently, seemed to accelerate the building of trust.
- Secondly, continuous engagement with Yong Zhao at networked learning was very important. Principals, teachers and the students typically responded very positively to Yong. His ideas and presence activated students and assisted schools to develop in educationally effective ways. One principal described him as having 'provoked' the students into action.
- Third, the network workshops appear to have motivated, inspired and scaled learning.

The constraints

Yong's input was especially important in schools where it was difficult to get students to work on their own, particularly when the Higher School Certificate (HSC) or Victorian Certificate of Education was seen as the overriding goal. In some cases, this pressure to conform to the norm came from students and parents, with the teachers getting 'squeezed' by competing schooling purposes and processes. Schools could promote the benefits and value of entrepreneurial learning, risk-taking and innovation to help address these constraints.

3. What, if any, are the perceived benefits and shifts resulting from this experience for participants? Do the participants think these will be long-lasting?

The benefits

The evidence points to students, teachers and principals feeling positive at the end of the initiative about what they had learned and done, and where they had progressed.

The benefits obtained from the initiative seem to be mutually reinforcing. What is good for students is often also good for their teachers.

An entrepreneurial learning approach to developing entrepreneurial-minded students who believe and can exercise their agency shows seven key benefits:

- **Accessible:** Any student can adopt the entrepreneurial learning principles, with appropriate teacher and peer support
- **Learnable:** Entrepreneurial learning is learnable by students and teachers.
- **Acknowledges context:** An entrepreneurial learning principles-led, voluntary networked approach values the uniqueness of students and contexts.
- **Expansive:** Entrepreneurial learning embraces students' agency and the role of adults in this.
- **Flexible:** Entrepreneurial learning gives teachers and students the creative freedom to innovate and prototype with school-based decisions about links to the curriculum and through structures, such as existing or newly introduced elective programs (e.g. work experience or interest-based clubs). Just as entrepreneurial learning gave students the creative freedom and flexibility to innovate and, in some cases, prototype, the initiative's approach, with its three guiding principles, discovery mindset and collaborative processes, gave the same flexibility and freedom to teachers and their teaching.
- **Experiential:** Entrepreneurial learning creates opportunities for creating, reviewing and refining products: Doing – feedback – re-doing for an authentic audience.
- **Resets:** Entrepreneurial learning promotes the resetting of the relationships between students and teachers, and connectedness to, and purpose of, schooling.

Shifts and longevity

All the research participants pointed to shifts or the deepening of shifts at the school level as a result of the initiative. Participants perceived these benefits to be long-lasting, and all the schools declared their intention to continue the new approaches or structures that commenced as part of this initiative.

Approaches included new elective programs based on student requests; new student-designed end-of-year programs; and new planning teams involving students working together, sitting alongside the SRC. Schools were working to embed or extend the three guiding principles in their schools, for example, by building it into their strategic plans, or extending their actions to include more students or staff.

Innovations of this type, implemented in different contexts and with different learners, are far from predictable. But, if the proposition is accepted that entrepreneurial-minded learners and citizens create value and are valued by the countries they live in, then we need a system that enables this. To use the students' words, the notion of the system "stepping back" warrants further attention.

Scaling the learning

The research findings from this initiative extend our knowledge and inform the development of entrepreneurial learning and student agency at both the school and system level. This will better position students for success. This research contributes to filling a knowledge gap that exists in developing young people who are more entrepreneurial-minded.

Drawing on the findings of this research, and the broader literature, schools may wish to consider a range of ways to pursue and embed entrepreneurial learning to enhance student participation, self-efficacy and engagement.

Schools could do this by:

- Prioritising and creating opportunities for students to lead their learning, and to develop authentic products of value to others.
- Ensuring teachers are equipped to support students' entrepreneurial learning, choosing the types of teaching that best match and enable students to develop an entrepreneurial mindset versus directing their learning.
- Creating opportunities for students and teachers to learn with each other, including time, funding and resources to effectively plan and collaborate.
- Creating and joining learning networks based on interest and need, and forming strategic partnerships between schools and with not-for-profits to drive change.
- Promoting the benefits and value of entrepreneurial learning, risk-taking and innovation to position students for success.

Governments, the community and industry can listen to young people in secondary schools and help create the conditions for innovation and system reform by working together to build and improve entrepreneurial education, and expand its reach.

Systems could do this by:

- Recognising schools as system changers, as well as acknowledging the important role of strategic partnerships between schools and not-for-profits, and voluntary, school-led networks in driving change.
- Explicitly recognising and valuing that schools are already finding multiple and diverse opportunities to create the time and space for entrepreneurial learning.
- Supporting schools that use their flexibility, local knowledge and partnerships to pursue innovations with a promising evidence-base, in a way that best fits and meets school needs, strategic objectives and contexts. Through recognition and incentives, for example, systems could help create the conditions for schools to be entrepreneurial by enabling diversity and choice around learning networks, rather than mandating approaches that may limit opportunities for schools to pursue strategic partnerships and learning based on evidence of interest and need.
- Acknowledging a broader range of data sets than is currently used to show the impact of learning, such as through developing assessments that measure the growth of students in areas beyond NAPLAN. Systems could also work with schools to develop case studies and tools, such as assessment rubrics for product-oriented learning and, in doing so, identify how schools are developing students' entrepreneurial-minded dispositions and cultivating capabilities such as critical and creative thinking.
- Enabling schools, through additional funding and support, to document and share good practice to inform the teaching of entrepreneurial learning in schools and to enhance student agency.

Potential future research

Given that entrepreneurial learning appears to be a promising approach to schooling, and a signature pedagogy or method to enhance student capabilities, it is important to strengthen the research and evaluation knowledge base in Australia around entrepreneurial learning in schools. The following areas of potential future research would enhance our understanding:

- By specifying further how schools cultivate the dispositions considered crucial for entrepreneurial learning, as well as the skillset teachers need to teach product-oriented learning. This research indicates that many teachers are learners too, when it comes to developing students' entrepreneurial-mindedness through entrepreneurial learning.

- By identifying the potential implications of a product-oriented learning approach for initial and ongoing teacher education in Australia. Some teachers in this research noted this was a gap in their pre-service education.
- By identifying the feasibility of entrepreneurial learning in different contexts with larger and diverse cohorts of students. While the research presented in this report is detailed, it is not generalisable.
- By gathering further evidence of how students and teachers are assessing the outcomes of entrepreneurial learning, and the longer-term impacts of this approach for students; and in doing so, provide practical advice to schools to assist them in deciding how this approach could be part of their pedagogical 'toolkit'.

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Appendix 1 – The collaboration timeline

The collaboration timeline of network developments

2015

- Mitchell Institute key change agents initiate discussions with NSWSPC and VASSP and with Professor Yong Zhao.

2016

- January - Mitchell Institute, NSWSPC and VASSP continue to develop 'the collaboration'.
- February - Principal briefings in each state, schools put forward expressions of interest.
- 6 March - NSWSPC and Mitchell Institute (including Yong Zhao) briefing and Q&A sessions for principals in Western Sydney.
- 9 March - VASSP and Mitchell Institute (including Yong Zhao) briefing and Q&A sessions for principals in Victoria.
- March/April - Schools self-select and contribute funding to join initiative.
- 12 April - Partner meeting (Mitchell Institute, VASSP and NSWSPC).
- 3 May - Victorian network session hosted at Origin.
- 5 May - NSW network session
- 6 May - Partner meeting – Partners formalise the collaboration with an MOU.
- 19 May - Partner meeting.
- 30 May - The CreatIF team (a group of 12 students from 5 of the network schools) and teachers met with Yong Zhao and a team from the Mitchell Institute.
- 13 July - Partner meeting.
- 25 July - NSW network session]for sharing of student's short videos to communicate the connection between their project and any of Yong Zhao's principles.
- 26 July - Victorian network session to share each school's artefact(s) to illustrate the progress of their project and how it connected to any of Yong Zhao's principles.
- 5 September - Partner meeting.
- October - Mitchell Institute screens the film 'Most likely to succeed' and holds a facilitated panel discussion.
- 6 October - Partner meeting.
- 19 October – Entrepreneurial learning newsletter sent to all schools in the initiative with updates on activities.
- 24 October - NSW WSR network participate in an Atlassian Design Thinking workshop for teachers.
- 31 October - NSW network session with input from FYA and Atlassian.
- 1 December – Victorian network session with input from FYA and ACRE focused on how young entrepreneurs are building communities.

2017

- 16 February - Partner meeting.
- 22 February - NSW WSR workshop with video journalist, Brett Frawley, focused on visual story-telling as a way of thinking critically about the journey through entrepreneurial learning.
- 2 March - Brett Frawley session Victoria.
- 3 March – Brett Frawley session Victoria.

- 14 March - Partner meeting.
- 17 March - Presentation at the Southern Peninsula Principals Conference, by the Mitchell Institute and Yong Zhao. Students from 2 Victorian Schools presented on their projects.
- 19 April - Partner meeting.
- 22 May - A joint forum of 21 secondary government schools (from both NSW and Victoria), attended by more than 150 school students, staff and the partners. Hosted by Origin in Melbourne to share, learn from and celebrate their entrepreneurial learning. Australian tech entrepreneur, Bevan Slattery, delivered the keynote address.
- 20 June - Presentation to the Victorian Department of Education and Training Policy Reform Group. Mitchell Institute presented an overview of the initiative, then two Victorian Schools shared their experiences and lessons learned.
- 14 August - VASSP State Conference with Yong Zhao as keynote and a workshop held on research findings from two cases =
- 1 September – Mitchell Institute, VASSP and NSWSPC recognised with the ACEL National Leadership Award for 2017 for collaboration on the initiative.
- 4 September - Final NSW WSR network session – including additional opportunity for students to vote on the best entrepreneurial pursuit from their network with funding support from Bevan Slattery and Origin Foundation to the 'winning' team.

NOTE: Venues for network meetings rotated between schools in Victoria, whilst were network meetings were hosted at one school in New South Wales

Appendix 2 – Interview questions

Each interview included a preamble, for example, about the voluntary nature of the interview and how responses were being used in the research. For brevity, this report only includes the questions.

Student interview

Can you tell me about what you did as part of the initiative at your school? [Tease out the problem they focused on and what they came up with to respond to the problem]

1. How did you come to be selected to participate in the initiative?
2. Do you think that your experience in the initiative has had much of an impact on you? [Tease out what excited them most about this opportunity? What were their highlights?]
3. If the initiative has had an impact on you, do you think that this will last very long? Why?
4. Did anything surprise you – good or bad – about your experience of initiative? If yes, what was it that most surprised you? [Follow up: Did you get 'stuck' at all as you were doing your 'project'?]
5. Thinking about your experience of the initiative and if this was to spread to other students in your school:
    - What advice would you give to future students to help them get the most out of this opportunity?
    - What advice would you give teachers to help you get the most of this opportunity?
    - At a network level, where do you think efforts should be prioritised? [Follow-up: Explore from different perspectives – other schools, with experts, such as Professor Yong Zhao, the partners and network coordinators]
6. How might the experience in this initiative need to adapt or change, or is it best left as it is?
7. Who do you think the initiative is for?
8. Is there anything else that we should talk about that we have not?

Thanks and close interview.

Teacher and principal interview

Below are the interview questions for the school visits. They were used in the individual interviews with the teacher(s) and principal. We also asked a series of baseline interview questions. These questions formed part of the first interview. They focused on the person's professional teaching and leadership history, school and community contexts, links to the curriculum and how the school currently 'tapped' in to students' interests. The questions also explored how schools were interpreting and implementing the initiative's three guiding principles, and where they thought they and the network needed to focus its efforts. The network coordinators were asked similar questions, but as relevant to their role within the initiative. Again, for brevity, this report only includes the questions.

1. Just in a few summary sentences, what did your students focus on as their problem to address and what did they come up with to respond to the problem? [Follow up: Did your school embrace any of the three guiding principles more than the other? How come?]

1. What do teachers need to have in place for students to get the most out this type of experience? (i.e. when given three guiding principles, but not a 'program') [Follow up: In what you have just outlined, what's the most important to have in place? And, why?] (This question is designed to understand priority, scope and or sequence)

2. In your professional opinion, could the three principles be adopted with any students? [Follow up: Tease out why or what needs to be adapted?]

3. What was the most important enabler to implementing the 'initiative' in your school?

4. What posed the greatest challenge to implementing the 'initiative' in your school?

5. What offered the greatest opportunity?

6. If the initiative has had an impact on the students, do you think this will last very long? [Follow up: Tease out why and what sort of impact and what tells them this?]

7. Revisit (in reference to the school leader's earlier interview responses) any shifts (e.g. advice questions) or developments/consequences since we last spoke (e.g. post the market space event)

8. Since we last spoke, have there been any further pivotal moments? [Elaborate]

9. Is there anything else important you wish to share?

Thanks and close

The research team gathered two other sources of information through:

Pivotal moments

Teachers and network coordinators chose and described pivotal moments. They identified these moments as 'significant' (for better or worse). For example, a pivotal moment might include:

- The happening of surprises (good or bad).
- The emergence of a difficult problem.
- The solution of that difficult problem.
- The visualisation of new futures/possibilities.
- The disturbance of a strong belief.
- The achievement of highly desired objectives.
- The change in a key component of the context.
- The emergence of threats, etc.

(Source: Center for Reflective Community Practice n.d.)

Pivotal moment questions

Thinking about the development or success of the initiative, use the following prompts to describe an important moment:

1. (What?) What's the moment about? [Brief top-line description]
2. (When?) At what stage in the initiative did this moment happen?
3. (Who?) Who were the key actors? And your relationship to the moment you're describing?
4. (Why?) Why do you think this moment was significant? What's so distinct about it compared to similar sorts of moments in the initiative?
5. (So what?) Why do you care about sharing this moment?
6. From your experience of this moment, has anything surprised you? (These may be good or bad surprises.)
7. Is there anything else important we should talk about that we have not?

Thanks and close

Pathways to participation statements

This data was on seven facets about student agency thinking (from the work of Harry Shier 'Pathway to Participation').

Students and teachers responded to these statements, first about the initiative and then about the school as a whole. They were asked the extent to which they agreed with each statement ('not at all', 'to a minor extent', 'to a moderate extent', 'to a major extent'). For brevity, only one set of seven statements from the student questionnaire is listed below.

1. I was listened to in this initiative
2. I was supported in this initiative to express my views
3. My views in this initiative were taken into account
4. I got to join in decision-making processes about what we did
5. I got opportunities to share in the responsibility for decisions about what we did
6. I had access to a range of ways to help me express my views about what we did
7. My school has a clear procedure that helped me join in decision-making processes about what we did

Appendix 3 – School artefacts

Action Cycle

An 'action cycle' tool was developed for use by the school teams to help them plan, act, demonstrate and draw insights from their implementation of the initiative in their school. School teams shared reflections from these documents at school-based team meetings with the network coordinator, as well as at network-wide learning and development days. These reflections, along with each school's final 'end of initiative' short report, a poster and three-minute video of their entrepreneurial learning 'journey', provided information to help triangulate findings from the interview and questionnaire data.

Data gathered from each school's quarterly updated action cycle: • Ideas (By type: new approaches; processes, products, services) • Volume (By number of students involved; number of ideas and by type) • Process (Actions taken to implement ideas, by type and volume, and by whom) • Student learning and participation (Evidence of capabilities and levels of participation) • Enablers and barriers (Opportunities created, what is getting in the way)	
Plan	• Our idea for action is to … (add) • With students in (add year level/s) through (add context and or learning area) • We explained the learning intentions of the three principles to students by…
Act	From idea to practice: • This is what our students will be doing …
Demonstrate	Expanding our use and understanding of evidence: • We will know our students are progressing their understanding and learning of the principles because …
Insights	• This is what is going well … • This is what we could do better next time to progress our actions with students around the three principles …

Plan (cycle begins again…)	• What is next for our action team?

Artefacts for final joint network celebration

The partners asked school action teams to prepare three artefacts for sharing at a final network celebration and learning forum. School teams were provided with the following guidelines:

Video – a three minute glimpse into the project or product from students' perspective, and the problem that is being addressed (what, why, how). Schools to decide on the creative format of the video and relate the project to the three guiding principles using the frame of Problem, Conflict, Resolution.

Poster – what has this project meant for students' learning? What's the evidence for this? This is a visual representation of the learning journey for students (in relation to the 3 guiding principles) and artefacts / data collected along the way

Report – an executive report on the impact of the project on students as entrepreneurs and the school as the facilitator of entrepreneurial learning. Consider the following questions in your response:

- ✓ What product resulted from the project?
- ✓ Why was this project important to students?
- ✓ How has this project changed the understanding/thinking of the entrepreneurial learning team, as a group?
- ✓ How has this project changed the school?
- ✓ What is next for the school and the entrepreneurial learning team?

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