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The capable country

Cultivating capabilities in Australian education

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About the Mitchell Institute

Mitchell Institute at Victoria University is an independent think tank that works to improve the connection between evidence and policy reform. We actively promote the principle that health and education are fundamental to individual wellbeing and to a prosperous and successful society. The Mitchell Institute was established in 2013 by Victoria University, with foundational investment from the Harold Mitchell Foundation.

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Overview

In Australia and internationally, there is a growing consensus that a range of attributes and expertise are necessary to successfully navigate life in an increasingly complex world. The attributes or competencies that are developed alongside content knowledge and skills are what we call 'capabilities'.

The degree to which individuals thrive is bound up with the relationships, ideas and events that comprise their education. In large part, their success relies on how well they grasp the "how" of learning, what it looks like to be a curious, creative, problem solving, team player. To move through life with opportunities to flourish and succeed, young people need to build their social skills, their understanding of others, their ability to adapt and learn from challenges and change.

From the earliest years, throughout preschool, schooling, tertiary education, and onwards into adulthood, capabilities are cultivated and grown through an accumulation of moments, interactions, activities and habits formed in the classroom, the home, the workplace, the community and the social sphere.

How capabilities make a difference in education and life

- Children need to build their capabilities so they can learn effectively – sit still, pay attention, follow instructions, concentrate, cooperate and take turns (Duncan, McClelland, & Acock, 2017).
- Capabilities improve our ability to learn (Bjorklund-Young, 2016).
- Young people with "enterprise skills" – such as problem solving, communication and team work – make a faster transition to full-time work (Foundation for Young Australians, 2018).
- Capabilities are the skills employers are looking for (World Economic Forum, 2016).

What are we doing in Australia?

Australia's education system can provide essential sites where learners from all backgrounds can cultivate capabilities. It is important that any approach to keeping Australia capable is not solely focused on the school years but looks both before and beyond to include early childhood education and care (ECEC), senior secondary, and post-school education and training. Other stakeholders, such as parents, carers, industry, community groups and social organisations, must be included in the conversation and equipped to support and complement the strategies of the education system.

Ten years ago, Australia's state and federal education ministers agreed to a landmark statement about the future of young Australians' learning. The statement, known as the *Melbourne Declaration*, recognised the need for young Australians to "become successful learners, confident and creative individuals, and active and informed citizens" (Ministerial Council on Education Employment Training and Youth Affairs, 2008). Building on some clear

recommendations in the recently released Gonski 2.0 report, *Through Growth to Achievement: The report of the Review to Achieve Educational Excellence in Australian Schools* (Gonski et al., 2018), we take the opportunity to reflect on the increasing recognition of the importance of capabilities and offer some insights for the Australian education system.

In this paper, we consider how capabilities can help all young people thrive throughout their lives – from the early years, through schooling, and beyond. We then look at the strategies that are likely to support effective implementation of a capability-rich curriculum. Framed as an eight-point strategy, we call for the rapid adoption of capabilities and suggest ways in which the curriculum can be leveraged to build capabilities and improve the quality of education for all Australians.

1. Capabilities in context

Education's role in building a strong range of capabilities in students is not new. In recent years, however, this role has been rethought and reinvigorated. We now think in terms of a combination of skills and dispositions, developed in practical, knowledge-rich contexts and experiences, to support students to navigate a complex, rapidly-evolving world.

Capabilities have the potential both to prepare students for an uncertain world *and* to enhance enjoyment, engagement and achievement throughout learning. Universal frameworks and approaches can ensure all children, regardless of their personal circumstances, are supported to develop the capabilities they need to thrive throughout their formal education and beyond.

Key curriculum documents, including the Early Years Learning Framework (EYLF) (Australian Government Department of Education Employment and Workplace Relations, 2009) and the Australian Foundation-Year 10 (F-10) curriculum (Australian Curriculum Assessment and Reporting Authority, 2013), explicitly feature capabilities as core and necessary aspects of learning and development. To achieve a highly-capable future, Australia must shift the experiences of all learners to realise the vision set out in these documents.

Reflecting the aspirations of the *Melbourne Declaration,* the curriculum call for all students to have access to teaching and learning environments where they can acquire deep content knowledge, core skills such as literacy, numeracy and Information and Communication Technology (ICT), as well as life and learning skills that will be central to their long-term success, including:

- critical and creative thinking
- personal and social capability
- ethical understanding
- intercultural understanding.

Australia's inclusion of capabilities in teaching and learning policies and frameworks is aligned with a worldwide shift in the past decade. Previously, education's role was seen primarily in terms of the instruction needed to build knowledge and skills. Now, it is recognised that education can provide more.

Australia calls them capabilities. They are also referred to as '21st-century skills', 'dispositions', 'habits of mind', 'attributes', 'competencies', 'non-cognitive skills', 'soft skills' or 'traits'.

Five signs of a move towards capabilities

Changing language

Education in the past focused on the '3Rs', knowledge and skills associated with reading, writing and arithmetic. There has been a worldwide shift away from the idea of learning as only about disciplines, to recognition of other attributes – the capabilities discussed in this report.

Inclusion in curricula and learning frameworks

Curriculum documents once focused solely on knowledge and skills associated with specific disciplines but now they include capabilities. Along with a growing number of countries internationally, Australia includes capabilities in the core national documents governing education.

The Brookings Institution found that around 86 per cent of countries include capabilities in documents governing education systems (Care, Kim, Anderson, & Gustafsson-Wright, 2017). Around 40 per cent of countries refer to capabilities in vision or mission statements, 55 per cent feature them in curriculum documents and 12 per cent, including Australia, seek to describe the progression of capability acquisition and development across age and subject groups.

Well-evidenced capability frameworks taking root across national and state borders

Curriculum innovation is no respecter of conventional geographic boundaries as educationalists, researchers and policy-makers combine forces to develop new approaches to curriculum, pedagogy and assessment. The existence of international frameworks, such as the UNESCO 'transversal competencies' (Care & Luo, 2016) and the OECD's efforts to define and select key competencies (OECD, 2018a), is perhaps the most powerful argument of all for an increasingly capability-focused world (for a snapshot of international frameworks, see Lucas, 2018).

Measurement: international, national and local

As education systems shift towards lasting integration of capabilities, attention is turning towards assessing and measuring attainment, both domestically and internationally. The OECD's PISA has become a benchmark for global comparative standards. As well as tests in English, Maths and Science, each PISA test cycle includes at least one "innovative assessment domain" such as 'creative problem solving' (2012), 'collaborative problem solving' (2015), 'global competence' (2018) and 'creative thinking' (2021). Other examples of measuring of capabilities include a Character Card to report student development in zest, grit, self-control, optimism, curiosity, gratitude, and social intelligence at Knowledge Is Power Program (KIPP) schools in the USA (KIPP Foundation, nd.), and the Brookings Institution's Soft Skills Report Card (Whitehurst, 2016).

More stakeholders are joining the conversation

As educators, policy makers, researchers and advocates debate the what, why and how of capabilities, other stakeholders – such as employers, industry representatives and youth organisations – are also engaging. For example, the Foundation for Young Australians (FYA) has produced a series arguing for the importance of "enterprise skills" (FYA, 2016). These are "transferable skills that enable young people to engage with a complex world". In the UK, the Confederation of British Industry (CBI) runs a campaign to promote capabilities or, as it terms them, characteristics, values and habits (CBI, 2012). Capabilities have also been put forward by the World Economic Forum, classified into 'foundational literacies', 'competencies' and 'character qualities' (World Economic Forum, 2016).

Multiple reports in recent years have focused on identifying the skills and capabilities needed for success in learning and life. Researchers from a range of disciplines, including economics, education and psychology, have looked at what capabilities matter, how they develop, and how they influence wellbeing and success (See for example Dede, 2010; Gutman & Schoon, 2013; Kautz, Heckman, Diris, Ter Weel, & Borghans, 2014; B. Lucas & Claxton, 2009; Pellegrino & Hilton, 2012).

In their recent review of the research and policy landscape, Lamb and colleagues listed nine skills that have received particularly extensive consideration from policy makers, researchers and practitioners worldwide (Lamb, Maire, & Doecke, 2017). All of the skills and qualities they identified can be mapped onto the domains of critical and creative thinking and personal and social capability.

Figure 1: Key skills for the 21st Century

Source: Lamb, Maire & Doecke, 2017

In addition to these commonly referenced qualities, the general capabilities in the Australian curriculum include numerous characteristics and competencies in the ethical and intercultural understanding domains. Beyond the F-10 curriculum, Australia's education system is well placed to promote capabilities from the early years, through senior secondary schooling, and in post-school contexts. Education departments, curriculum authorities, researchers and advocates are working to build momentum to take the growing body of knowledge about effective instructional practices and effective approaches to measurement and apply them in systematic, inclusive and effective ways.

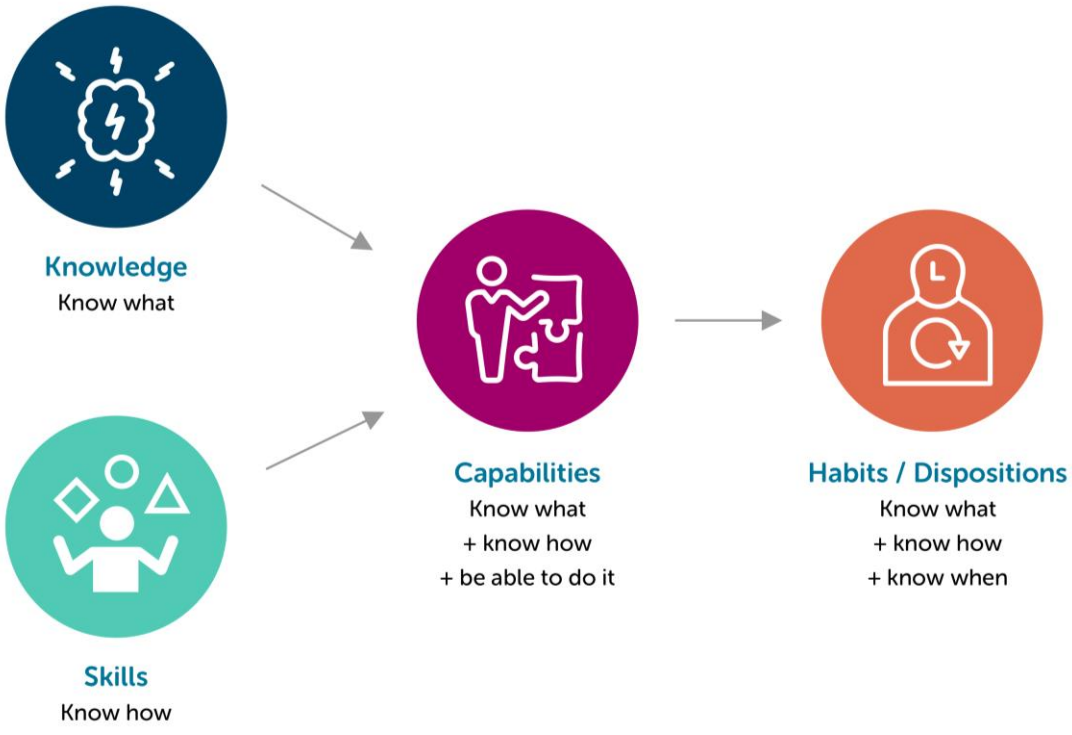
Today the question is not *if* we should seek to teach young people to be capable or *what* capabilities matter, but, given the evidence of their importance, *how* best to do this for all young Australians and *who* should play a role.

2. Progress in Australia: building capabilities through education

Beyond establishing and building capabilities, education is a powerful way to support young people to *deploy* capabilities in a range of real-world settings. Developing and using capabilities supports individuals to become lifelong learners who are confident, connected, and actively involved in education, society and culture.

Each capability is a cluster of knowledge and skills – an interweaving of knowledge, skills, attitudes and values that form the competencies that drive actions (OECD, 2018a). So, for example, developing self-discipline, an essential aspect of personal and social capability, requires an individual to make choices, follow routines, manage time, analyse factors, select strategies and so on. These sub-skills then get combined and described at a more generic level where they form part of an even larger concept – a capability. When young people are given opportunities to routinely use capabilities, they become lifelong habits and dispositions.

Figure 2: Building capabilities through education



Source: Lucas, 2017

Capabilities across the education system

The development of capabilities does not begin and end at the school gate. In Australia, there is activity across the education system to support all learners to build capabilities. For children experiencing disadvantage due to family or socio-economic causes in particular, the chance to build capabilities through the education system is invaluable.

> "Team work skills do not show up if situations do not include interesting and challenging team work interactions."
>
> **KAREN VAUGHAN, NEW ZEALAND COUNCIL FOR EDUCATIONAL RESEARCH**

Progress to date

Early learning

Capabilities are at the core of high-quality ECEC practice (Hamre, 2014; Siraj et al., 2017). Effective early learning involves holistic developmental approaches, grounded in play and exploration, and scaffolded by caring, attentive educators (Hamre, 2014). For example, providing outdoor games, arts and crafts supports young children to grow in their creativity, curiosity and social development, and dramatic play encourages imagination, self-control and perspective (Leggett, 2017; Whitebread, Kuvalja, & O'Connor, 2015).

Instruction in early learning in Australia is guided by the EYLF. The framework draws on early childhood development evidence to identify the outcome areas educators can target to build the foundational skills and capacities of young children. The EYLF shows how high-quality ECEC can build children's capabilities through developmentally appropriate interactions and learning opportunities (Community Child Care Co-operative Ltd (NSW), 2015). ECEC providers, in each state and territory, are periodically assessed for their adherence to the EYLF and the standards articulated in the National Quality Framework.

Australia tracks the early development of capabilities through the Australian Early Development Census (AEDC). Since 2009, the AEDC has been conducted every three years to inform policy makers and educators about the levels of risk and vulnerability among children in their first year of compulsory schooling.

The AEDC includes developmental assessment across five domains: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills; and communication skills and general knowledge. These domains reflect a holistic view of early education, one which is carried through into the F-10 curriculum in large part through the general capabilities.

Ongoing commitment to support high quality ECEC, in particular funding for two years of universal access to preschool, is needed to ensure all young children are given this solid grounding in capabilities.

Schools: Foundation-10 implementation across jurisdictions

The seven general capabilities in the Australian F-10 curriculum intersect and build upon the EYLF outcome areas (ECA & ACARA, 2011). These skills and competencies then build and develop into capabilities that will be useful for life (Deloitte Access Economics, 2017). In the F-10 Curriculum each general capability is comprised of a series of elements that underpin a learning continua. The learning continua typically align to stages of schooling however they are described across levels 1-6 to emphasise that development is independent of student age.

According to the 2017 *Monitoring the effectiveness of the F-Year 10 Australian Curriculum* Report, from the Australian Curriculum, Assessment and Reporting Authority (ACARA), all of Australia's states and territories have incorporated the general capabilities into their syllabuses and learning frameworks (Australian Curriculum Assessment and Reporting Authority, 2018).

Most states have targeted literacy and numeracy approaches, and the Northern Territory has a specific curriculum for Indigenous Languages and Cultures. Tasmania's state education framework places capabilities at the centre of its vision

for all students. The Australian Capital Territory (ACT) and South Australia are both working on cross-sectoral approaches to implement general capabilities in teaching practice. Victoria is the only state that has developed curricula and learning progressions for the explicit teaching, assessment and reporting capabilities separate to specific subjects.

In South Australia, a new initiative will see four dedicated entrepreneurial high schools established, and a 'Business Innovation' subject introduced into the senior secondary curriculum (Marshall, 2018). New South Wales (NSW) recently took part in trials of on online tool to assess critical thinking in Year 11 students.

In parallel with nationwide efforts, and the activities of the state and territory education departments, there has been extensive activity in the Independent and Catholic school systems. This has involved a number of deliberate strategies to support the cultivation of capabilities in students, including enhancing educator skills and confidence through professional development with international and Australian experts.

Victoria: Taking a system-wide focus on teaching and assessing capabilities

The Victorian Curriculum and Assessment Authority (VCAA) has led development of both pedagogies and assessment methods for cultivating and tracking critical and creative thinking. They provide content descriptions and achievement standards for all of the general capabilities. The major statewide education reform agenda, *Education State*, includes specific aspirations around the critical and creative thinking capability. The target is that, by 2025, 25 per cent more Year 10 students will reach the highest levels of achievement in critical and creative thinking skills (Department of Education and Training (Victoria), 2018).

South Australia: An all-sector approach

A cross-sectoral steering committee is working towards strengthening the general capabilities in classroom practice. This includes high-level representation from each sector and the South Australian Certificate of Education (SACE) Board. The committee reports directly to the Minister for Education and is developing strategies to measure and track capabilities across the state.

Senior secondary schooling: pathways and transitions

States and territories are shifting towards more explicit inclusion of capabilities in senior secondary teaching and learning. For example, in Queensland, efforts are underway to develop a new suite of senior school syllabuses in preparation of a new Queensland Certificate of Education (QCE) system from 2019. These reforms call for capabilities to be developed until the end of secondary schooling. The skills specified for implementation throughout QCE syllabuses are: critical thinking, creative thinking, communication, collaboration and team work, personal and social skills, and ICT skills (Queensland Curriculum and Assessment Authority, 2017).

The place of capabilities in the senior secondary years should be considered as part of the current conversation around if and how attainment is assessed and reported for students completing their schooling. For those undertaking vocationally focused pathways, a strong capabilities framework could enable practical skills to be acquired, applied and assessed in reference to their transferable, highly sought after qualities. This additional component of senior school-based vocational learning may provide an incentive for students to remain connected with school.

Similarly, for students hoping to pursue university education, continued development of the crucial competencies is an ongoing imperative. Given the increased role of non-ATAR pathways in university admissions, and the call from employers to ensure young people start work with well-developed capabilities, it may be timely to reconsider how and why our system ranks and reports student achievement (Pilcher & Torii, 2018).

More nuanced reporting of student achievement across all approaches to senior schooling that includes not only performance on subject-specific assessment tasks or skills demonstration, but also incorporates capabilities, may provide more students with a better sense of what they have learned throughout their schooling. Such a measure may also be valuable for future educators and employers.

Post-secondary education: skills and competencies

Universities and vocational education and training (VET) providers across Australia are also giving increased attention to the cultivation of capabilities. A focus on the relationship between skills, knowledge, mentoring, and practical opportunities to apply and demonstrate learning, will enable education systems to support continued development of student capabilities (Bennett, Richardson, & MacKinnon, 2016).

The development of skills and dispositions depends on students having the context and the chance to use them (Vaughan, 2017). The rich learning that is possible when instruction is coupled with context and experience can transform team work, communication, creativity and problem solving from concepts into valued capabilities.

Higher education

Universities and other higher education providers have a key part to play in developing independent, well-developed and capable lifelong learners who are able to thrive at work and in their personal lives. This involves a sophisticated combination of content and capabilities. Amidst concerns that university graduates could be better prepared for the workplace, many institutions are looking for innovative ways to support students to bolster their capabilities (Oliver, 2016). There has been a marked increase in recent years in the number of universities offering so-called 'micro-credentials' to undergraduate students. Examples include:

- RMIT offers students a range of free 'RMIT Creds' to build professional and personal capabilities, such as communication, innovation, leadership, critical thinking, collaboration, sustainability and creativity (RMIT, 2018).
- Deakin promotes their micro-credentialing practices as "an opportunity to focus on those generic employability capabilities that will always be in demand" (DeakinCo., 2018).
- The University of Sydney offers 'student employability programs' to give students the chance to "build networks, solve real-world business problems and gain entrepreneurial know-how" (University of Sydney, 2018). The university has also recently announced a plan to evaluate graduates on eight qualities: depth of disciplinary expertise; critical thinking and problem solving; communication; information and digital literacy; inventiveness; interdisciplinary effectiveness; an integrated professional, ethical and personal identity; Influence (engaging others in a process, idea or vision) (University of Sydney, 2018).

Vocational education and training

The role of vocational training in preparing young people for the workforce is well-established. Emerging from the long-standing tradition of trade guilds, on-the-job training coupled with mentoring by established practitioners forms the core of the apprenticeship model. Similarly, the VET sector offers students the chance to learn and apply a range of skills and capabilities in both the classroom and the workplace. Some examples of how the VET sector is supporting student capabilities include:

- School Based Apprenticeships and VET in school programs are offered as a way to provide pathways towards the workforce and develop the employability skills of students while they complete their secondary education.
- A range of Vocational Courses are offered by TasTAFE to improve capabilities for students including: engagement, literacy and numeracy, safety, team work and workplace communication (TasTAFE, 2018).

3. Next steps: A strategy for implementing a capability-led curriculum

Australia's education system is in transition – there is widespread recognition that the old ways of teaching are no longer enough.

The recently published Gonski 2.0 report makes several important recommendations for capabilities. It calls for more prominence to be given to capabilities as well as a review of senior secondary schooling to ensure students finish school with "skills for the future" (Gonski et al., 2018, p. xii). One of the report's three priorities is to "Equip every student to be a creative, connected and engaged learner in a rapidly changing world" (Gonski et al., 2018).

Yet the practice of intentional and explicit teaching, learning, and especially assessing, of capabilities is still relatively new and challenging to many schools and educators. We are not suggesting a total pivot towards solely focusing on capabilities, but an approach where knowledge, skills and attitudes are emphasised, as suggested in the OECD's *Education 2030* Framework (OECD, 2018a).

Australia at present varies across jurisdictions and systems in terms of implementation, and remains some way from systematic application across all services and schools. To shift practice from where it is to where it says it would like to be, Australia can take the following eight steps to embed effective promotion of capabilities across its education system.

> "The capabilities are part of a package. They provide the glue for a 21st century curriculum by contributing the kinds of generic skills and dispositions that enable disciplinary and interdisciplinary knowledge to be used in the world."
>
> **ALAN REID, AUSTRALIAN SECONDARY PRINCIPALS' ASSOCIATION**

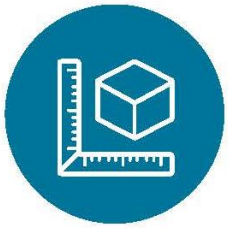
Eight steps to strengthen capabilities through Australian education

1. Make a strong, evidence-based case for the value of capabilities to employers, parents and educators

2. Consider capabilities across the continuum from the early years through to post-school education

3. Simplify existing learning continua for the general capabilities

4. Create clear case studies to show how capabilities can be fostered through education



5. Enable professional networks to share effective practices

6. Draw on existing promising practices to create guidance on the assessment of the general capabilities

7. Provide support for principals and leaders to exercise instructional leadership in the development of capabilities

8. Create an evidence base to promote sharing, innovation, and widespread practice improvement

1. Make a strong, evidence-based case for the value of capabilities to employers, parents and educators

Many people may assume that the characteristics articulated in capability frameworks are largely born rather than made. However, we know from developmental psychology and education research that these capabilities do not just occur. They require enabling environments, modelling, experiences, contexts and conditions to develop and become a part of a young person's suite of skills.

> If a tipping point is to be reached to change the implementation of capabilities from policy and planning to broad, lasting shifts in practice, three key groups need to be persuaded: employers, parents and educators.

Employers

Following a 2016 roundtable of leaders from policy, business and education, Mitchell Institute released a report *Preparing young people for the future of work,* which articulated the importance of capabilities to "bridge the academic and vocational divide, providing young people with the resources to navigate the future" (Torii & O'Connell, 2017, p. 3).

Our learning systems are in the midst of a challenging transition. There are calls for shifts in priorities, in preparation for both the anticipated skill requirements of the future and the current mismatch between education content and employability. As noted in a recent report from Deloitte Access Economics, "a quarter of entry-level employers report having difficulty filling vacancies because applicants lack employability skills . . . demand for self-management, digital skills, problem solving and critical thinking skills . . . significantly exceeds supply" (Deloitte Access Economics, 2017, p. 1). Calls for the education system to better prepare young people for their working future are coming from different employment groups and industries (CBI, 2012; Deloitte Access Economics, 2017). Moves from training organisations and universities to offer short courses targeting capabilities, such as micro-credentials, reflect a shift to ensure students are given flexibility to gain credentials that testify to their work readiness.

The role of employers is key, both in endorsing the inclusion of capabilities throughout formal education and in providing ongoing opportunities and support for employees to build and refine their skills and competencies throughout their working lives. As Vaughan (2017) suggests, "with support and capability development in their own internal systems, employers might see themselves as members of the education community, rather than recipients of education's 'outputs'".

Parents

Families play a significant role in fostering and building capabilities in cooperation with education systems.

Beyond what parents can do at home to encourage children's development, they can be allies in efforts to strengthen capabilities in formal education. In Australia, many parents (and students) are focused on ATAR as the end-product of education, and are often wary of anything that distracts from that. There is, however, increasing awareness of the different and developing skills required for a more complex workforce and, indeed, for living happy, fulfilled lives.

Some parents may not immediately understand the word 'capability' and are more comfortable talking about specific subjects. However, there is growing evidence from across the world that once parents see what capabilities mean they like the idea of schools developing knowledgeable, capable, employable and socially-aware young people very much.

Educators

Not all children and young people have the chance to grow up in home environments with parents who are able to fully support and enable the development of their capabilities. Schools, preschools, ECEC providers, and other educators are vital to address this gap for vulnerable youth.

There is an opportunity and an appetite for educators to be better prepared to teach, measure and assess capabilities from early childhood onward. The Gonski 2.0 panel found many teachers would like professional development in teaching and assessing general capabilities, as well as information and resources to improve understanding of how to teach them across the learning areas (Gonski et al., 2018).

It is important to include capabilities in teaching standards and initial teacher education programs, to ensure educators know they need to include them in their teaching, and are prepared to do so with well supported pedagogical strategies (Lamb et al., 2017). The current Australian Professional Standards for Teachers (AITSL, 2011) include only sparse reference to the general capabilities, and the *Guidelines for the accreditation of initial teacher education programs in Australia* (AITSL, 2016) do not require teachers be taught how to implement capabilities other than literacy, numeracy and ICT.

There are resources available to support educators in their efforts to build their own skills and capabilities in this area. The Australian Institute for Teaching and School Leadership (AITSL) offers illustrations of best practice to give examples of effective approaches. On request, ACARA's Curriculum unit provides support for states and territories in relation to the implementation of the general capabilities.

Bringing the education workforce on board is essential. For students to experience high-quality teaching of capabilities, educators require time to build their own strategies, experiment using methods such as action research, and access feedback and support to refine their skills and confidence.

2. Consider capabilities across the continuum from the early years through to post-school education

Capabilities are developed throughout life, and it is important to take a lifelong view to ensure young Australians may flourish across these domains.

While capabilities appear in our learning frameworks and curricula, building strong connections between different education settings will enhance the overall effectiveness of our education system's capabilities agenda. When educators have a sense of how capabilities develop throughout a young person's life, it will enable them to "identify which skills their students are ready to learn" and then to assist them to "develop with scaffolding from more capable others and opportunities to practice their skills" (Woods, Mountain, & Griffin, 2015, p. 290).

The rapid learning and development that occurs in the first years of life provides the foundations for school and beyond. The better prepared young children are for school, the greater the likelihood that they will enjoy and excel in their learning. For example, young children with good emotional security are better able to develop into young learners who can manage and regulate their emotions, and they are more likely to develop into students who can build healthy relationships and express their emotions in appropriate ways.

Drawing out the connections between capabilities in the early years with the first years of schooling will provide both preschool and primary school educators with greater insight into how to support children's learning and development. In the early years, it is essential that children are provided with supportive, playful environments where they can develop self-regulation, emotional and social skills.

Figure 3: How children build capabilities

Source: Whitebread, Kuvalja & O'Connor, 2015.

At school entry, those children who may not have gained the same level of growth in their capabilities as others may be scaffolded to catch up using strategies from early childhood education, such as those articulated in the EYLF. This reflects the cumulative nature of skills and capabilities, and the need to establish strong foundations in the first years of learning. Before young children can sit still in class, follow instructions, understand rules, and persist on tasks - they need to develop basic skills in self-regulation and emotional management (Center on the Developing Child at Harvard University, 2011). Although individuals each develop at their own pace and progress is rarely linear, it is important that where and when a young person has slipped behind appropriate approaches are used to increase their skills and confidence.

At the other end of schooling, as students start to consider the pathways they want to follow throughout their lives, capabilities should still be considered. As noted previously, it is important that momentum for building capabilities is not stalled during senior secondary schooling. Those tasked with curriculum development and implementation should keep in mind the skills and competencies students need and ensure they have chances to develop and practice adaptability and flexibility, initiative and innovation.

Micro-credentials and practical work placements are two platforms that can foster students' increasing understanding of how capabilities can support work readiness and lifelong learning. For example, a soon-to-be doctor, carpenter or engineer discovers how essential team work, collaboration and problem solving are by using them in their day-to-day work (Vaughan, 2017). Conversely, students with strong interpersonal skills may be drawn to careers where these are core competencies, such as allied health or caring professions. The real-world context of job training provides a socio-cultural environment in which skills and dispositions can form, develop, and become a valued part of the trainee's sense of self and identity.

Capabilities can maximise connections between education and work. As young people enter the workforce, they benefit from the foundations in capabilities established during their years in formal education. Throughout their working lives, these competencies and skills will continue to build through practical application and experience.

3. Simplify existing learning continua for the general capabilities

When scrutinising the Australian curriculum it is clear how teaching capabilities can become complex and confusing. As Lamb and colleagues have noted, "While examples of successful practice exist in the research literature, school systems are still working to provide a coherent approach to embedding key skills across the various stages of schooling, and to evaluate more systematically how the emphasis on key skills impacts on the work of teachers, schools, as well as on student learning and outcomes" (Lamb et al., 2017, p. 40). Teachers and parents may be wary about capabilities because of the level of noise around *what* teachers are already doing to foster capabilities and *how* they could be doing some things differently to improve student outcomes.

The capabilities in the national curriculum are not wrongly specified, but there are issues with translating them from complex intersections and detailed progression charts into practical, achievable strategies that educators can put into practice in learning environments. As well as simplification, modifications may be worthwhile to build evenness across the conceptual frameworks and strengthen the evidence supporting individual elements. There is also a growing recognition of the need to provide specific instruction on how to provide effective environments and experiences for students to learn capabilities in initial teacher education courses (Scoular & Care, 2018).

Teaching capabilities: Learning transfer

Underpinning the idea of a generic skill is the idea of learning transfer. To take personal and social capability for example, the assumption might be that resilience can be learned in one subject and be ready to use in another.

In fact, knowledge and skill transfer is extremely complex. Two concepts help us here, specific versus general and near versus far. Specific transfer occurs when, for example, you use something learned in one context in another. A simple example would be using addition in maths and then using addition to make sense of the results of a science experiment. Generic transfer is when a construct learned in one context is transferred to another. Staying with personal and social capability, an example of effective transfer would be that resilience learned in the context of keeping going when running a long-distance race readily transfers to the resilience needed when learning a second language. Generic transfer is more tricky than specific.

Near transfer is slightly different. Near is almost a synonym for 'easy', for example, when you upgrade a computer or mobile phone, the new model is sufficiently similar that once you see it you are prompted to transfer knowledge and skills you acquired from your earlier version.

Far transfer is when the context or concept do not come so readily. One example is a young child who learns that, after accidentally hurting yourself, counting to 10 can help get you through to the point when pain stops. Later, this experience of resilience could transfer – in a "far" or "distant" fashion – to keeping going (showing resilience) in a complex group assignment.

With all kinds of transfer it is helpful if teachers talk with students about future applications of their learning when they first encounter it and consciously provide opportunities for the new capability or skill to be practised in different contexts. So a young child might be taught the idea of 'three before me' in an English lesson, a protocol requiring them to talk to three of their peers before asking for help from their teacher. When the idea is introduced pupils can be reminded that the three before me idea – asking their friends rather than automatically seeking an adult's help – can be useful at home or when they are stuck on a group task in many different learning areas at school. So resilience can be learned and then applied in different situations.

4. Create clear case studies to show how capabilities can be fostered through education

Something that cannot be taught has very limited value in a national curriculum. Reassuringly, there is a growing body of research demonstrating that capabilities can be taught through increasingly well-documented pedagogical methods (Such as, B. Lucas, Claxton, & Spencer, 2013; Zhao, 2012). They can also be cultivated through less formal, extra-curricular activities.

For four years, an OECD Centre for Educational Research and Innovation (CERI) project has been exploring the teaching and assessment of critical and creative thinking. This project involves 11 countries - Brazil, France, Hungary, India, Netherlands, Russia, Slovak Republic, Spain, Thailand, United States, and Wales (OECD, 2018b). The project shows that it is possible both to teach and assess this capability.

Many states have begun to provide exemplar materials. Most go through a process of mapping current practice, suggesting teaching methods, exploring assessment techniques and providing professional learning.

There are a range of support materials available for educators from ACECQA, AITSL and ACARA, such as videos giving illustrations of practice for implementing instruction of capabilities. For example, ACARA provides advice to support teachers to meet the educational needs of students with disability. Key resources include advice related to personalised learning and using the general capabilities to support the learning of all students. ACARA has published Illustrations of Practice which highlight how a range of schools have used age equivalent learning area content and the general capabilities to support students with disability.

Another key strategy is to use signature pedagogies, that is, the approaches to teaching and learning which are most conducive to cultivating particular capabilities (Shulman, 2005). For example, if you want a student to become more curious, then your teaching methods may be inquiry or problem-based. Or if you want children to become more resilient then they will need to have opportunities to develop strategies for getting unstuck when they reach the limits of their current expertise.

Figure 4: Cultivating critical and creative thinking: signature pedagogies

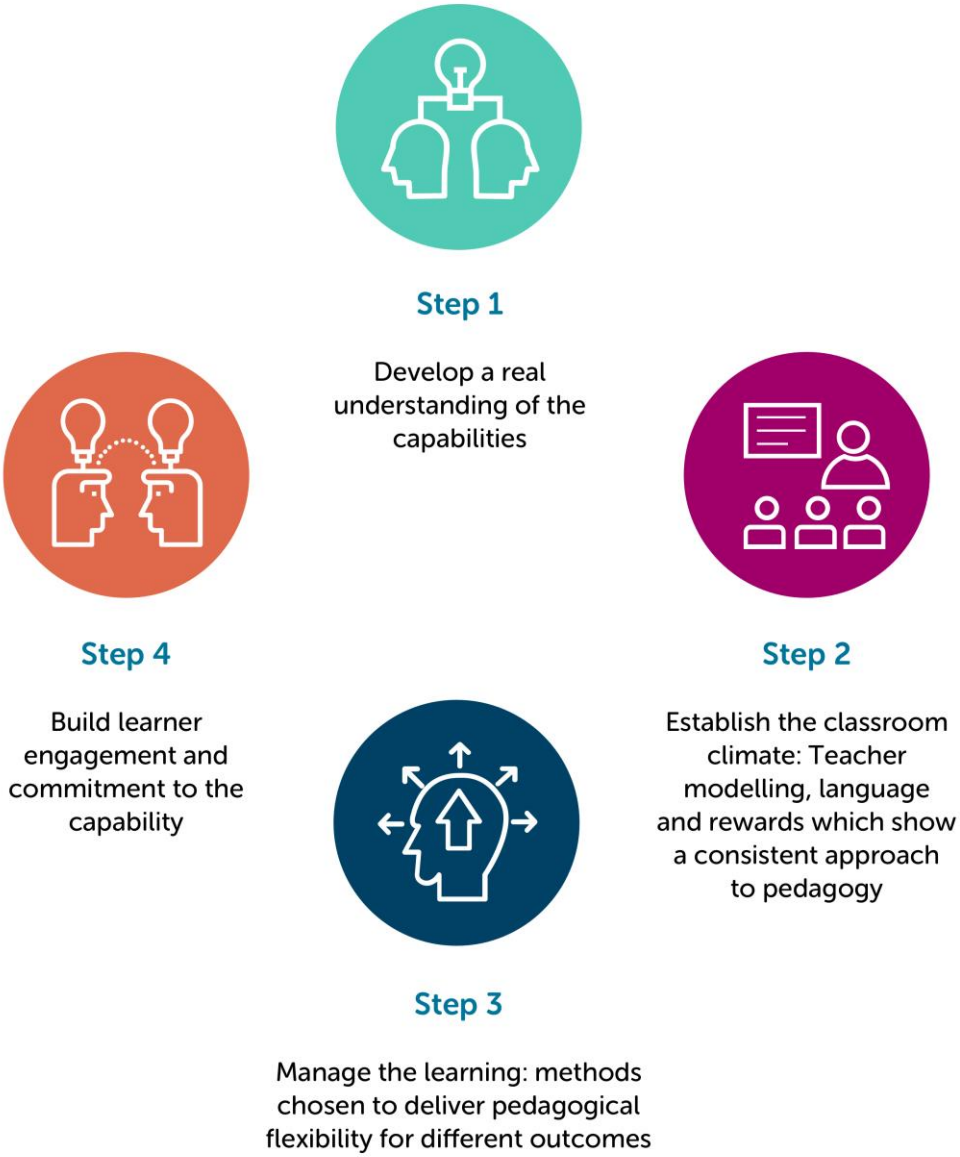
5. Enable professional networks to share effective practices

The inclusion of the general capabilities as a discrete area for teaching and instruction in school curricula is a relatively recent phenomena. As such, it is likely that there are many educators currently in classrooms who feel ill equipped to build these capabilities in their students – they were not given training in how to teach these skills, and may not have the confidence to develop class plans and strategies targeting them (Scoular & Care, 2018). There is a need for both preservice teacher training, and ongoing professional development, to support the education workforce to gain and implement knowledge of best approaches they can use to foster capabilities in their students.

The effective implementation of the national curriculum requires investment at the system level to ensure ongoing development of teacher capability. This may involve revision of initial teacher education, opportunities to exchange insights and experiences with other teachers, secondment and professional learning. It is important to understand both teachers' level of expertise and their beliefs about their role, curriculum, and the outcomes they value. Some respond best to reasoned persuasion about the value of capabilities where others may require step-by-step implementation guidance. All will benefit from high-quality, networked professional development.

In some discussions about the development of capabilities it is often wrongly assumed that, to develop capabilities in students, teachers need to completely change their instructional practice. As recent research by McKinsey shows, in implementing capabilities we need to avoid binary positions and instead focus on choosing the right blend of methods; "students who receive a blend of inquiry-based and teacher-directed instruction have the best outcomes" (Denoël et al., 2018). Rather than abruptly switching from an emphasis on sharing knowledge didactically to an approach where students determine what happens, a more balanced approach is likely to be the most effective where the expertise and knowledge of the educator is applied to providing a range of approaches that situate students as active agents in their learning (Goss, 2018; National Research Council, 2012).

Figure 5: Implementing a capabilities curriculum



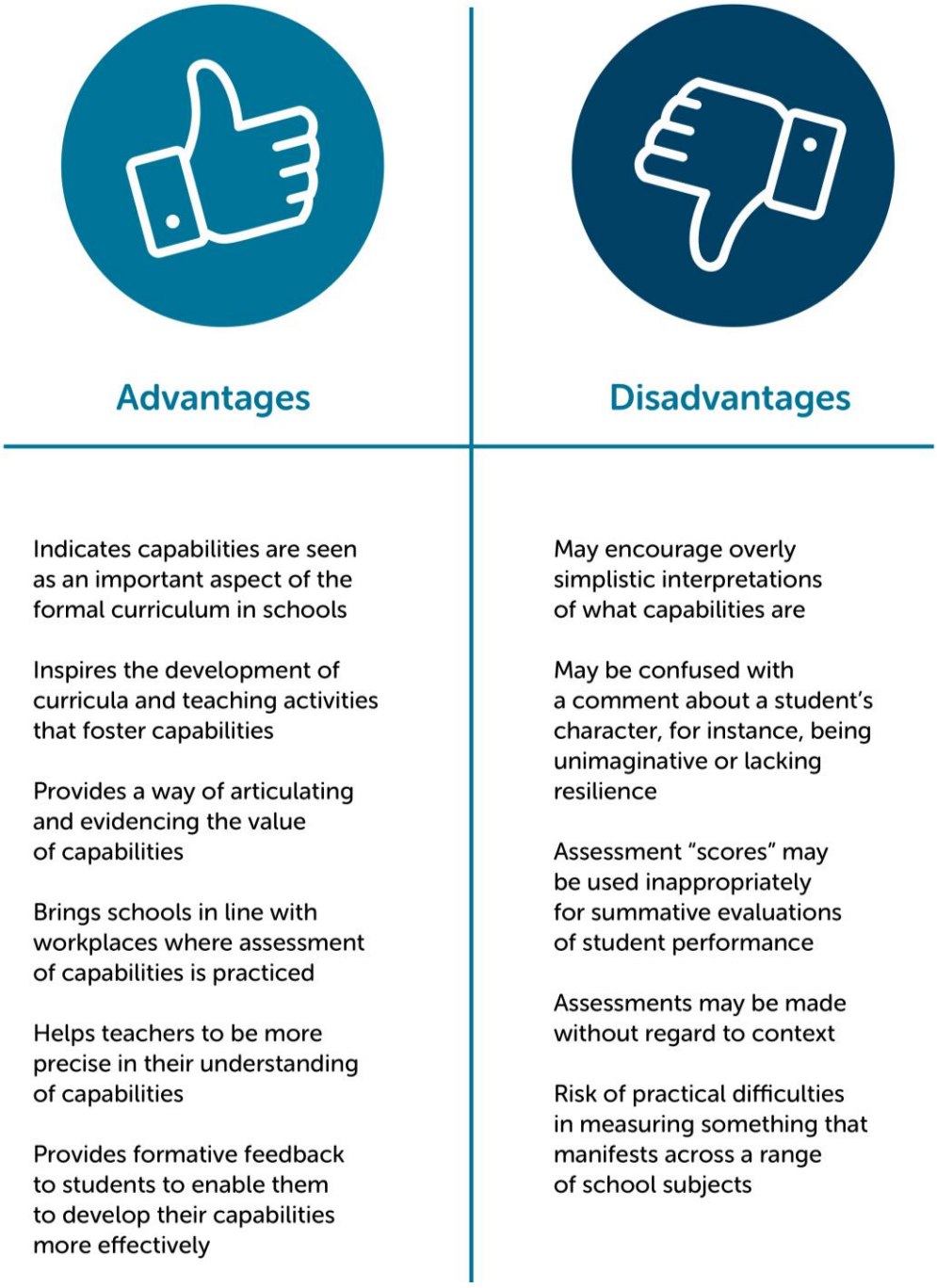
Source: Lucas & Spencer, 2017.

6. Draw on existing promising practices to create guidance on the assessment of the general capabilities

There has been considerable progress, both in Australia and internationally, around assessment.

Extensive scholarly attention has been dedicated to investigating how best to teach and assess capabilities, with much of the developmental work for the PISA 2015 test of collaborative problem solving, for example, undertaken at the University of Melbourne (See for example, Care & Griffin, 2017; Care, Griffin, & Wilson, 2018; Woods et al., 2015). The Australian Council for Educational Research (ACER) has also been working closely with the VCAA to develop online tests of critical and creative thinking for use in Victorian schools (VCAA, 2018).

Figure 6: Advantages and disadvantages of assessing capabilities



In our work with Victorian schools, we have co-developed approaches to assessing capabilities, focusing on the four approaches described in Table 1. These approaches can be applied in many ways, such as: online platforms; student portfolios of evidence, either physical or digital; teacher judgment of learning in the classroom using rubrics from the scope and sequence statements, and; performances and exhibitions of work judged by experts.

Table 1. Approaches to assessing capabilities

Student	Teacher	Real world	Online
▪ Real-time feedback ▪ Photos ▪ Self-report questionnaires ▪ Logs / diaries / journals ▪ Peer review ▪ Group critique ▪ Badges ▪ Portfolios	▪ Criterion-referenced grading ▪ Rating of products and processes ▪ Structured interviews ▪ Performance tasks ▪ Capstone projects	▪ Expert reviews ▪ Gallery critique ▪ Authentic tests, e.g. displays, presentations, interviews, podcasts, films ▪ Exhibitions	▪ Reliable, validated online tests ▪ Digital badges ▪ E-portfolios

Source: Lucas and Spencer, 2017.

These approaches are yet to be widely implemented, however as states and territories become more systematic in their application of assessment practices it will be a clear signal to employers, teachers and parents that Australia's education system attaches importance to capabilities. It is important to ensure assessments are useful for educators, students and other stakeholders, with an emphasis on student growth and development, rather than competitive ranking. We will only know how and if Australia's education system is effectively facilitating student capabilities if we take a new approach to how we measure success, whether student success, educator success, or organisation and system success.

7. Provide support for principals and leaders to exercise instructional leadership in the development of capabilities

Targeted support for leaders is and will remain critically important for continued practice improvement. Research on effective learning leadership stresses the need for principals and other education leaders, such as service directors, to engage directly with pedagogy and instructional practices (Robinson, Hohepa, Lloyd, & The University of Auckland, 2009).

Principals and education leaders can provide assurance and establish an environment that values and supports educators as they refine their strategies on capabilities – this leadership tells the wider community this work is significant and valued.

> "Governments and systems should support schools to try new learning approaches and connect with other schools working to transform learning."
>
> **MITCHELL INSTITUTE, 2017**

8. Create an evidence base for all aspects of the implementation of the general capabilities to promote sharing, innovation, and widespread practice improvement

Much has been accomplished in the teaching and measuring of capabilities in Australia. However, there is overlap and variation between jurisdictions, school sectors, and learning contexts which mean best practice approaches are not yet the norm across the system.

To avoid duplication of efforts it will be helpful to have a national research focus. Such a focus could support robust evaluations of promising practices to promote ongoing innovation and progress. It will also ensure sharing of best practices in implementing and assessing capabilities, consolidating the knowledge of what is working, what is less effective, and identifying gaps where there is still much to learn. In particular, specific evidence is needed to understand more about different methods of assessment and their effectiveness for different capabilities in different contexts.

Conclusion

Australia is well placed to develop and implement a coherent, structured and consistent understanding of how capabilities are learnt, what the best approaches are to enable student progression against learning objectives, and how the education system can ensure high quality universal provision of capabilities for all young Australians.

Capabilities have been a feature of high-quality education throughout history. Along with the subject-specific content that sits at the core of learning, capabilities are key to ensuring all students receive a well-rounded education. Children and young people do not acquire capabilities uniformly or automatically, so it is necessary to recognise and prioritise opportunities within our education systems where they can be developed, promoted and refined. To avoid further entrenching inequities in the education system, it is important to ensure all students are given the chance to build their capabilities throughout their learning experiences. This will require ECEC services, preschools, schools, VET providers and universities to embed strategies that allow the capabilities to be both interwoven with subject studies and developed through projects.

Similarly, it is essential that educators across the system are able to develop their confidence and skills as teachers of capabilities. In order to provide all children and young people with appropriate opportunities and guidance, educators should be provided the necessary professional development.

Priorities for a way forward

We recommend the following policy approaches to assist in the systematic cultivation of capabilities across Australia.

- **Commit to long-term implementation**
  The general capabilities, as expressed in the EYLF and F-10 curriculum, should be retained to allow educators and services to continually improve instruction and development. Effective approaches should also be embedded in instruction in senior secondary schooling and beyond. This will provide educators with growing confidence and competence in the strategies that grow capabilities in students.

- **Support the workforce**
  Design and deliver professional development opportunities for educators to build their skills and confidence in promoting relevant capabilities through their teaching, giving recognition to expertise and mastery and establishing mentor networks across sectors and disciplines.

- **Take a strategic approach to measurement and assessment**
  Ensure an emphasis on student growth and development, rather than competitive ranking. Commit to continued participation in the innovative domain tests of PISA support the refinement of international measurement of capabilities, and get a sense of the trends in Australian education over time and with international perspective. Continue to consider how our national sample assessment program could integrate general capabilities.

If Australian students are going to realise their potential, it is important to provide them with the opportunities to thrive, not only in traditional academic attainment but also in the skills and capabilities they will rely on throughout their social, learning, cultural and working lives.

The Melbourne Declaration framed this in terms that are now embedded in the school curriculum, echoing the objectives of the early years learning framework, and looking towards the realisation of lifelong capabilities.

All Australian children and young people can develop capabilities – investing in their development in ECEC will improve chances of all children starting school with good foundations. Continuing to increase the level of sophistication and complexity of instruction and support throughout the school years will ensure students enter early adulthood ready to engage effectively with the challenges of post-school life.

Not all children enjoy the same opportunities and resources, so it is vital that our education system is configured to ensure all young Australians can build capabilities.

Capabilities need to remain a priority in education policy and planning. We need to maintain support for and from well-equipped educators, and with the provision of resources and guidance from curricula, frameworks and policies.

Inspired by the vision of the Melbourne Declaration, and driven by the imperative of shifting worlds of life and work, our education system can give all young Australians the foundations they need to learn and thrive in a capable country.

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