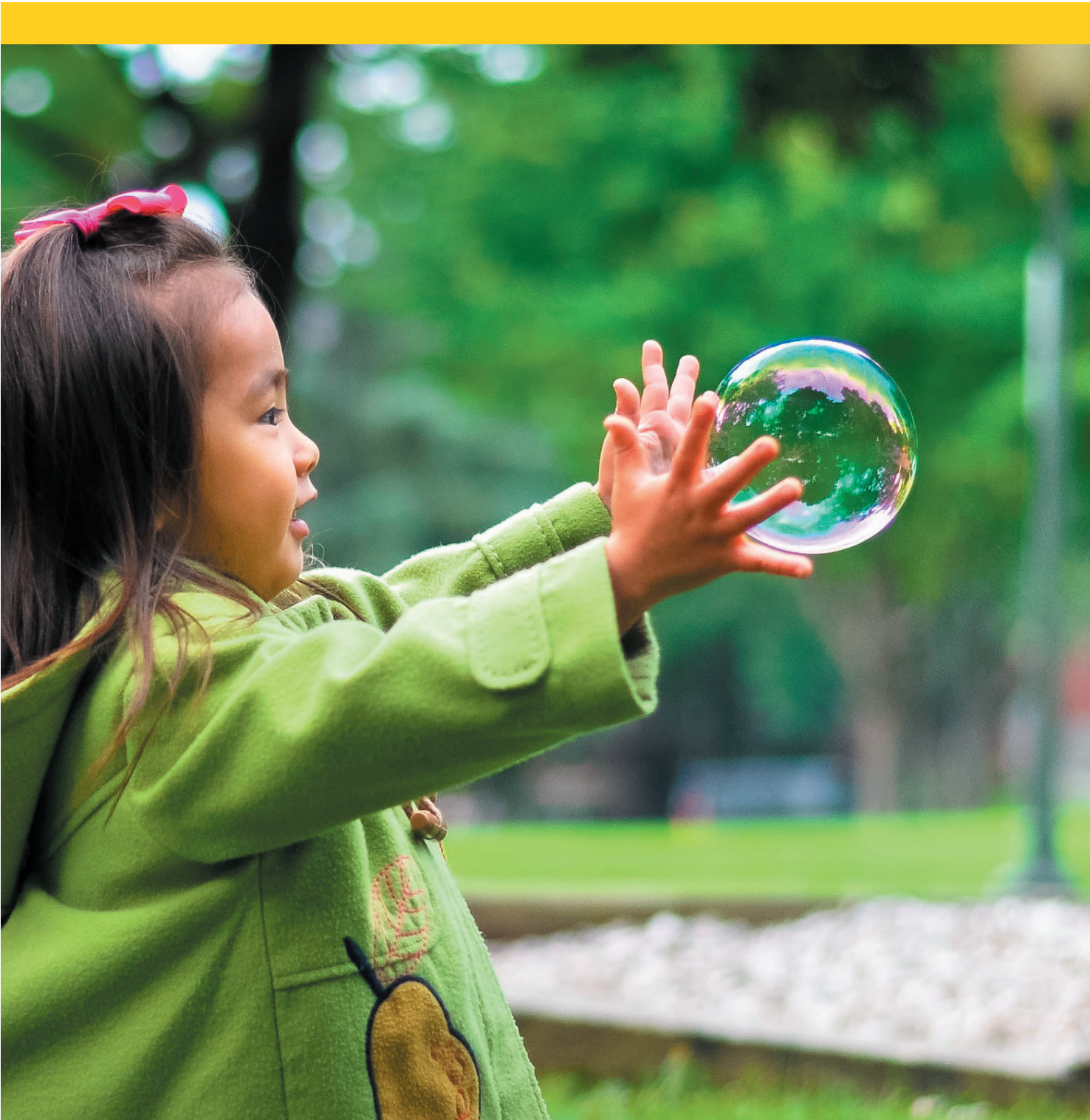




The Commonwealth Bank jobs and skills of the future report.

CommonwealthBank







About this report

The *Commonwealth Bank jobs and skills of the future report* was commissioned by the Commonwealth Bank of Australia in collaboration with futurist Ross Dawson, and explores the changes in jobs, skilling and education in Australia.

About Commonwealth Bank

Commonwealth Bank is Australia's leading provider of integrated financial services, including retail, premium, business and institutional banking, funds management, superannuation, insurance, investment and share-broking products and services. Since opening its doors in 1912, Commonwealth Bank has grown to more than 1,350 branches and 51,800 employees around the world.





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About Ross Dawson

Ross Dawson is globally recognised as a leading futurist, entrepreneur, keynote speaker, strategy adviser and best-selling author.

He is CEO and Chief Futurist of the R7 Group of companies, which incorporates the marketing and innovation firm Rh7thm and multiple start-up ventures.

Ross's expertise has led him to deliver keynote speeches and executive workshops in 29 countries across six continents, consult to leading organisations and lead executive education programs at top universities worldwide.

Ross is the best-selling author of books including *Living Networks*, which foresaw the social networking revolution, and has been named as one of the most influential people in the world on the future of work.



Introduction

Creating a positive future of work is perhaps the single most important issue we face as a society. Australia's future prosperity relies on all of us preparing for what is likely to be a very different world of jobs ahead.

Accelerating technology and social shifts are driving massive change in the economy, with fast-paced innovation transforming industries old and new and generating tremendous new opportunities for value creation.

Rising connectivity is continuing to enable digital disruption and more jobs now than ever before can be performed anywhere in the world. Meanwhile the rise of machine capabilities is beginning to impact a number of specific tasks.

The capabilities and skills that will be most valued are changing. We need to develop Australians' skills in the disciplines of the future, notably science, technology, engineering and mathematics (STEM). In addition, we need to foster the uniquely human capabilities that keep us ahead of machines, such as adaptability, creativity and relationships.

Each of these shifts place education at the heart of Australia's future. Schools and universities need to prepare our children and young adults for the jobs of tomorrow, not those of today. We must all become life-long learners, embracing the joy of tapping our human potential.

If we want a flourishing economy and society for Australia in years to come, we must take action now. This report provides insights and recommendations that will help Australian individuals, families and organisations plan effectively for the future of jobs. Let us work together to create a prosperous future for Australia.

Ross Dawson
Futurist and Author

Do our kids have the skills they need for tomorrow?

1 in 2 disagree

*CommBank ATM Survey 2017, results as at 17/05/2017. Details at can.com.au

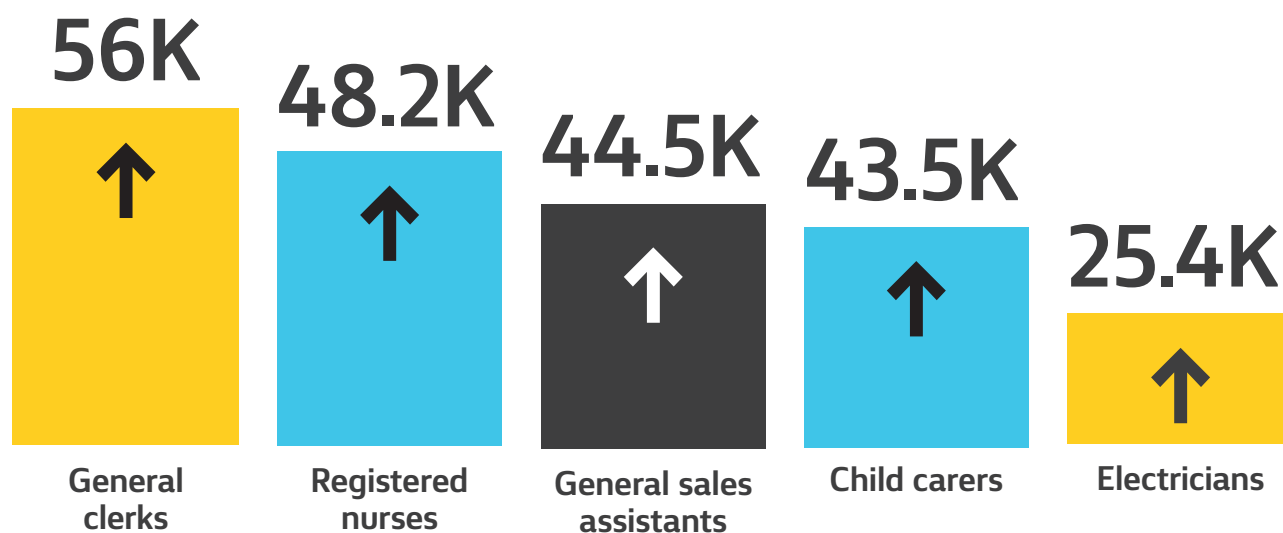
The current state: jobs and skills

Jobs and skills in Australia

Over the past few decades, the Australian economy has continued to shift away from lower skilled jobs towards a higher skilled, service-based economy. Australia is transitioning from a resources-based economy to one that is diverse, innovative and technology-based. Those who flourish will be those who adapt quickly and take advantage of the opportunities this shift brings. This goes for organisations as well as individuals on their own career paths.

Innovation is crucial to our future success as a nation. However, the national skills shortage in the fields of science, technology, engineering and mathematics (STEM) identified by the Australian Industry Group in 2013¹ continues to pose a challenge to our ability to innovate and evolve our economy.

Growing job numbers, Australia-wide



Contracting industry job numbers, Australia-wide



*Department of Employment report, Australia's Job Report 2016

The current state of play: jobs and skills

Spotlight on Commonwealth Bank

Our values underpin everything we do and innovation is a core pillar that runs all the way through our 51,800 strong organisation. Internally, we are continuing to build a culture of innovation through leadership, people, ways of working, products and services. Externally, we are building an innovation ecosystem through our collaborative experimentation with emerging technologies and by working with governments, fintechs and start-ups, universities and other education providers, all supported by our global network of innovation labs.

But innovation does not just mean new technology. While Commonwealth Bank has seen greater demand for technology skills and other expertise of the future, skills such as customer service, collaboration and curiosity are equally important. Academic achievement and technical skill are valued and recognised, but overall, we view talent as simply a desire to keep getting better.

New and in-demand roles at Commonwealth Bank

Behavioural Economists

This role supports human-centered design to create better outcomes for Commonwealth Bank, our customers and Australia.

In-branch Concierge

This role is crucial to our new format branches, welcoming customers and matching their needs to branch specialists.

Innovation Managers

This role supports in design thinking, rapid prototyping and user experience testing for a variety of initiatives in our Innovation Lab.

Digital and Analytics Roles

Talent for these roles is in high demand. They drive our continuous investment in pushing the boundaries for our customers and redefining banking.

The current state of play: education

In an increasingly cashless society, understanding how to manage money is the foundation for achieving financial wellbeing. In the digital age, smartphones and the opportunity to make in-app purchases mean children are making financial decisions from earlier ages.

One in five Australian 15-year-olds are below the baseline of standard money management skills, with these statistics even more pronounced among lower socioeconomic and Indigenous students.³

Now, more than ever before, it is important that financial education start as early as possible and be taught in schools. The range of products and services on offer to children, and

the opportunities to make shopping decisions has grown in complexity, reinforcing the need for children to start learning important money management skills at an early age. It is also vital that children continue to develop their financial skills at different stages of their growth, such as when they get their first job.

Research also shows that more than 60 per cent of parents report their children find the concept of digital money difficult to understand and say their children's approach to learning is changing, and they are looking for new and innovative ways to learn about money.⁴

The current state of play: education

Addressing the STEM skills shortage

A nation's competency levels of science, technology, engineering and mathematics (STEM) will be important determinants of its productivity and economic competitiveness over the coming years. More and more jobs will require high levels of STEM learning and skill. In fact, the forecast shows that 45 per cent of employers are seeking to increase STEM-qualified staff over the next 5-10 years³.

In Australia, however, education has fallen behind the skills demand. There has been a steady decline in maths and science literacy among 15-year-olds since the year 2000.⁷ In maths literacy, Australia has declined from being one of the highest performing countries in 2000 to performing little better than the OECD average in 2012.⁸ There are also fewer STEM qualifications at tertiary level, with particularly low participation among female students.⁹

The jobs of the future require problem solving and digital skills, and innovative and creative thinking, all taught through STEM.

In Shanghai, China, 56% of students are in the 'elite' levels of mathematics performance, whereas in Australia it's 15%*

Girls are performing 1/3 of a school year behind boys in mathematics*

*Building Australia's Capacity and Gender Inclusion in STEM Sectors, Baseline and benchmarking report, 2016

At a grassroots level, the STEM shortage is being actively addressed by Australia's best teachers.

"We've really taken on the STEM psyche, which has been a very different way of thinking and learning – asking our students to develop skills for the 21st century rather than purely focusing on content. We're also implementing a really strong project-based learning model that's tailored to meet the individual needs of students. By personalising the learning – wrapping the curriculum around a student's passions and allowing students to develop projects that meet the curriculum through this – we are seeing an increased level of student engagement in STEM."

Chad Bliss, Principal, The Canobolas Rural Technology High School, NSW. Commonwealth Bank Teaching Award Fellow 2017.



Trends shaping jobs and skills

The world of work is changing rapidly, largely driven by the development and uptake of new technologies. As exponential growth continues in bandwidth, data storage and processing power, work can be done in many new ways. These powerful forces of change are creating a dramatically different landscape for work, where traditional approaches will be supplanted by new models for creating value and completing work.

Driving forces of change

Connectivity

More work than ever before can now be done anywhere and these capabilities will only continue to increase. There are now 3.5 billion people on the planet who are connected to the internet, with another 2 billion more expected in the next five years.¹² All knowledge-based work can be performed anywhere, with crowdsourcing tapping into the best workers globally. In addition, physical tasks are increasingly being performed remotely. For example, much of the mining machinery in the Pilbara is operated by workers in Perth, over 1,000 kilometres away.¹³

Machine capabilities

The pace of development in artificial intelligence (AI) and robotics has accelerated dramatically over the last few years, enabling human work to be replaced by task automation, driverless cars, AI-driven hiring processes and drone delivery, among a myriad of other innovations. The numbers of some jobs, such as fast food service and truck driving, are likely to decline rapidly in coming years. As other jobs evolve, the use of machinery for some tasks will enable workers to focus on their development of more uniquely human skills.

New world of work



Constant change

Nearly all aspects of work will continue to change. Every job will be continuously developing as technology and organisations rapidly evolve.



Collaboration

This is not a time for a person to stand alone. To create value in a complex world we must work closely with others, bringing together our unique skills.



Diversity

To keep ahead, we must bring together diverse ways of thinking, and we must be good at working effectively with people who may be very different from us.



Fluid work

Jobs will not be static, they will be always changing, requiring people to contribute in the ways that best tap into their talents.



Keeping ahead of machines

Machines will be getting better all the time, taking parts of our jobs and shifting our focus forwards on things that only humans can do.



Working with machines

The future of work will be primarily about how people can collaborate effectively with machines to do what neither can do alone.

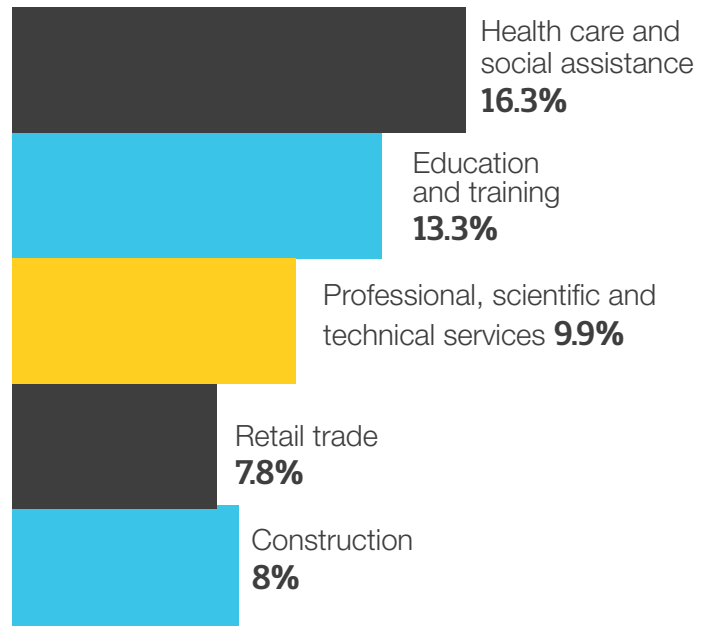
Jobs of the future

Emerging trends and future trends

Advances in digital, data analytics, automation and artificial intelligence are changing the jobs landscape rapidly. While some jobs will become obsolete, new jobs will be required. Those who develop transferrable and flexible skills such as digital literacy, problem solving and STEM will be well prepared for the changing job market.

The Department of Employment predicts that jobs involving creativity, complex judgement, advanced reasoning, social interaction and emotional intelligence are likely to grow in the decades ahead, and are less likely to be affected by advances in automation and artificial intelligence¹⁴. Education remains crucial. Employment for a skill level of a Bachelor degree or higher is projected to increase strongly by 10.3 per cent by 2018. Also forecast for growth is employment for skill level of Certificate II or III, projected to increase by 7.4 per cent.⁶

Industries forecast to experience employment growth⁷



⁷Department of Employment report, Tomorrow's Digitally Enabled Workforce, 2016

In the next decade...

Australia's workforce will be older and more culturally diverse. Nearly one in five Australians is expected to be over 65 years old in 2035.⁸

Rapid advances are being made in artificial intelligence.

Cloud computing has arrived, enabling lean start-ups to connect diverse groups of workers.

Task automation, where the clear majority of human tasks are performed by robots, will create job opportunities and lead to need for skills that are very different from those that exist today.

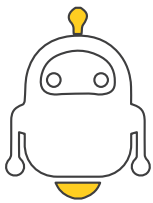
Jobs of the future

Future directions

The upcoming shifts will shape the kinds of jobs that emerge in coming years.

Technology will become pervasive, part of almost every aspect of our lives, meaning it must be useful and intuitive to the point that it becomes almost invisible to us. However, constant change, new technologies and the many intersections of a networked world will make the world deeply complex and highly challenging to understand. Many of us have already found we are becoming busier in an always-connected world. Being time-poor creates demand for help, not just with our usual tasks around the home, but new ones that are emerging.

New, high-value job roles will emerge because of this change.



Bionic interface designer

Technology will become not just something we use, but something that enhances our capabilities. The aim of interface designers will be to enhance humans and their control of powerful technology, from voice commands and emotion recognition through to thought control and operating remote robots for physical tasks.



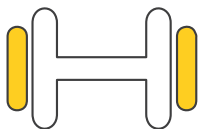
Emotional experience expert

Australians are increasingly discerning about their experiences as customers. Highly empathetic people and advanced technologies will work closely together to design and deliver service and experiences that are not just effective, but emotionally engaging. Customer service will draw on the state-of-the-art technologies to help create positive emotions as well as value.



Sense-maker

Many jobs will be about making sense of change, of complexity, and of new technologies, to help executives, customers and individuals make better decisions for themselves. This requires pulling together ideas and information, and communicating them in a powerful way, often visually, to help change minds them in a powerful way, often visually, to help change people's minds.



Health and fitness optimiser

Healthcare is shifting from focusing on curing sick people to making everyone healthier. Some will focus on working with elderly people to track their health, shifting their behaviours where needed, and predicting when advanced care may be needed. Others will help busy people be fit, analysing their activity data and motivating them to keep on track towards their personal goals.



Data insights miner

The amount of data available is exploding, yet on its own it is useless. There is enormous potential value in data, yet it requires skilled miners to dig deep to uncover insights that help individuals and managers. Miners should also be excellent communicators, polishing and presenting their findings, so they can be readily understood and acted upon.

Jobs of the future

Spotlight on Commonwealth Bank

We're investing in partnerships and programs with education providers to make sure our young people are prepared for the future. This includes support to increase participation in STEM education and to attract more women to IT.

As a financial technology leader, we support Australia's growing digital economy, with a focus on:

- Big data.
- Cyber security.
- Financial technology.
- The internet of things.

But it's not all about technology. Certain skills will remain just as important:

- Customer service - this is our most valued skill and always will be, no matter what changes technology brings.
- Collaboration - one part of our values and one of our most important skills.
- Curiosity - you don't have to be a digital native, but a mindset of curiosity and a willingness to test and learn are crucial.

The technical capabilities of our people will continually evolve, but our commitment to the customers we serve and the communities we're part of will always be just as important.

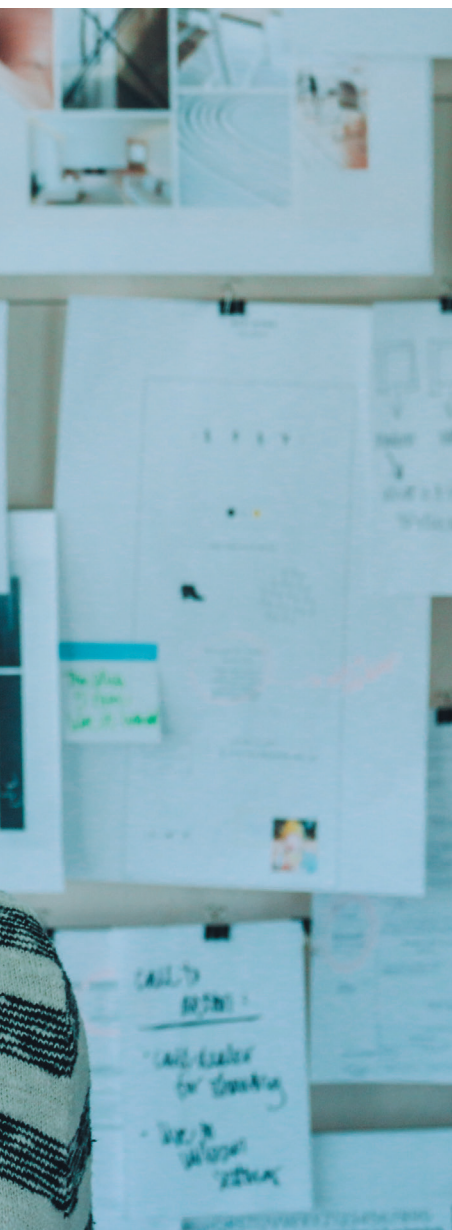


Skills and capabilities of the future

The dramatic shifts in the landscape of work and jobs mean new capabilities and skills are required. Most importantly, everyone from truck drivers through to CEOs will need to be receptive to robots and artificial intelligence as technology rapidly progresses.

That means we must focus on the uniquely human capabilities that distinguish us from machines, such as creativity, imagination, emotional intelligence and empathy. We need to be able to learn and have the attitudes and emotional strength to deal with constant change. Many jobs will emerge as a result of technological advances that will underpin our business and society. In a world driven by machines the most valuable work will have a deeply human focus, helping to build a world which supports a high quality of life for all.





Capabilities

Creativity

Value will not come from the old ways, only the new, making imagination and creativity central to tomorrow's capabilities.

Relationships

Everything comes from people; we will need exceptional interpersonal skills to tap into people's talents and collaborate efficiently.

Adaptability

In a rapidly changing world we must be highly flexible, able to deal with ambiguity, work across cultures and shape ourselves to new situations.

Learning

We must be life-long learners with a deep appetite for the new and the ability to continuously gain and develop new knowledge.

Skills

Design

We need to use design thinking to create unique responses to individual responses and develop understanding of how things work well for humans.

Technology

We need to understand the fundamentals of technology and develop areas of specific expertise, especially so we can work well in conjunction with sophisticated machines.

Analysis

There is a massive value in information but it requires insight, perspective and the ability to communicate well to help drive better decisions.

Business

Understanding the fundamentals of business and finance allows all skills to be made more relevant, and enable good ideas to be readily built into entrepreneurial ventures.

Education of the future

The education landscape is changing to meet the demands of the future, with the emergence of new subject areas such as robotics and coding. While technology is vital, literacy and numeracy are still as crucial as ever. As a nation, we must continue to increase participation and excellence in STEM fields.



Flexible classrooms

Larger class sizes with multiple teachers who can flex between smaller and larger units.



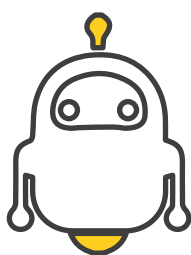
Virtual reality

Skills learnt by experiencing real life scenarios virtually.



E-learning

Teaching in an online, interactive world.



Robots

Various types of robots will be deployed in the classroom, from 'microprocessors on wheels' to humanoids that can foster personal connections with students.



Digital tablets and writeable desks

Students sharing work by presenting on large screens in the classroom.



New learning spaces

Innovative learning spaces designed to encourage creativity and prepare students for the future workforce.

The teachers' view

Sarah Mathews

Master Teacher, Brisbane
Bayside State College, QLD.
Commonwealth Bank Teaching
Award Fellow 2017.



“Teaching is now much more of a team sport; teachers are starting to plan together and use evidence-based practices.

“While classic careers like teaching, science and law are still popular, students are now really starting to think ‘what can I do for myself?’. We’ve seen a shift in students wanting to utilise social media and the digital world – Instagram, Facebook – to build their profiles and start their own businesses, which leads to a real interest in developing their digital skills while at school.

“You have to explicitly teach kids how to relate to each other. In today’s society there is a lot less time spent talking due to technology – less friend time, less family time. Ultimately, teachers are now also teaching kids basic learning behaviours as well as educational expectations for a task.”

Sharyn Angel

Deputy Principal, Shailer
Park State High School, QLD.
Commonwealth Bank Teaching
Award Fellow 2017.



“Coding and robotics are two subject areas that did not exist even two years ago. These activities are going to be in very high demand in many employment areas over the next 20 years.

“Health and engineering are going to be the careers with a lot of growth in the next ten years so we’ve introduced a *Nexus Academy* which looks at funnelling maths and science into degrees and careers in these high-paying areas.

“Literacy and numeracy still need to be the backbone of any great education institution. Every school needs to maintain this focus. We can’t let the importance of technology obscure that message.”

Chad Bliss

Principal, The Canobolas Rural
Technology High School, NSW.
Commonwealth Bank Teaching
Award Fellow 2017.



“Students still have a traditional job mind-set, however, most students will be going into jobs that don’t exist yet. While they might say they want to be a doctor or a lawyer, our goal is to introduce them to thinking that they can do anything they want to do.

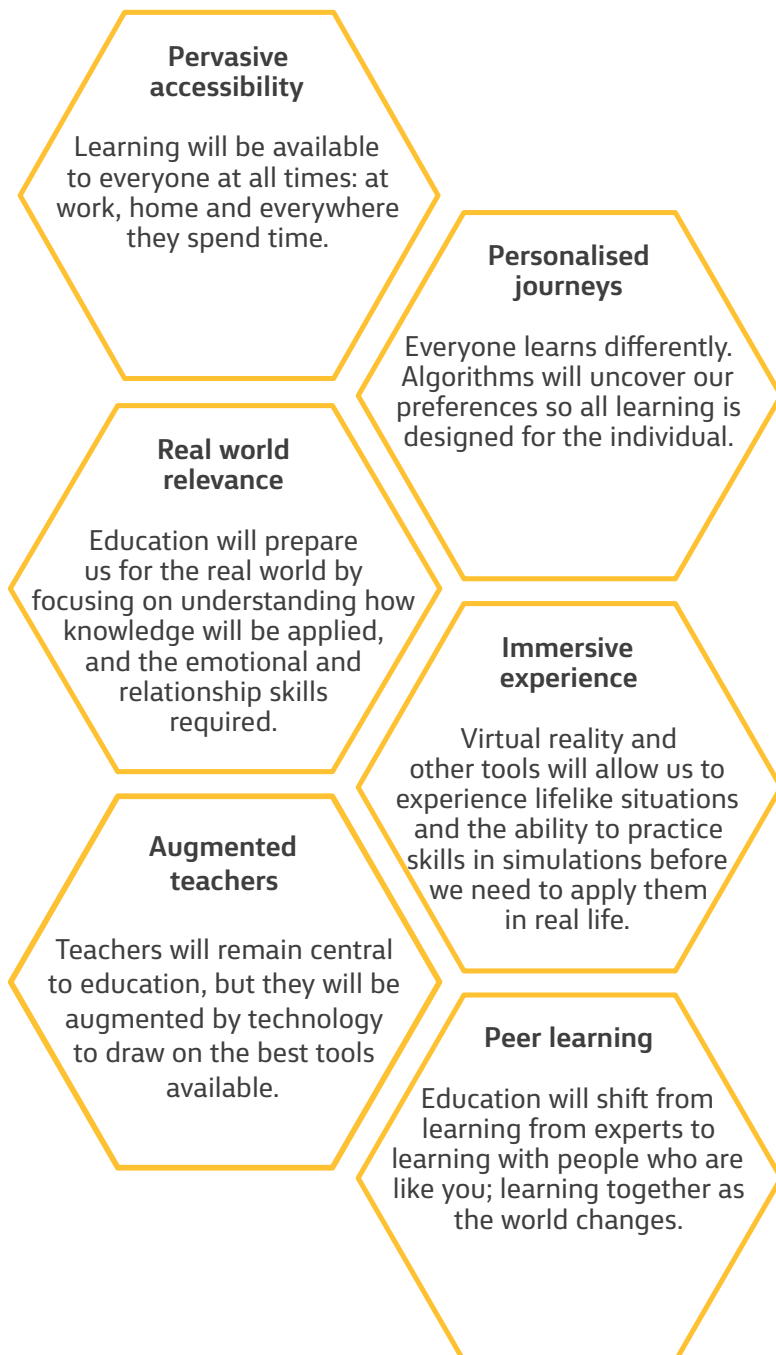
“All of the research tells us that Gen Z is going to have 10 to 15 careers over their 50 years in the workforce. Students need to be prepared to look at what is and isn’t currently out there, and have an open mind about what their careers will look like – school is a place where we teach skills that you will need in life, not just content.”

Education of the future

Looking further into the future of education, we may see a radical restructuring of how we learn, not just in schools and universities, but throughout our lives.

Classrooms will continue to exist, enhanced through the use of a wide range of new tools, technologies and methodologies. Education will also become an ongoing part of everyone's lives, and embedded into our employment, helping us improve our skills and capabilities while we work.

Characteristics



Credentials

Formal degrees and diplomas will continue to be important in the future, however, they will be less necessary. Algorithms are increasingly able to analyse data about your work and study to indicate your capabilities in a work environment, often better than a formal academic qualification can.

Some employers are identifying high-potential candidates with software that assesses how specialists in a field have contributed to their profession and how their peers view them.

Rather than multi-year degrees, we will often get recognition for shorter learning journeys. Education institutes will begin to offer 'nano-degrees' that show competence in a specific domain.

We may move to a world in which employers look more to the information they can gather about individuals' knowledge, work and attitudes than to their official certificates.

Money management

Where once children built their money skills by observing their parents pay for goods with cash, children will learn important money lessons without touching cash, and buying decisions will be made with the tap of a card or smartphone.



What you can do today

All change brings challenges and opportunities. Given the exceptional pace of change in the world today, no-one can expect a job for life or even a consistent role for many years. Everyone will need to consistently enhance their skills and move on to new roles to keep pace with the world. We can heed basic guidelines that will serve us and our livelihoods as we move forward.



Individuals

Take the time to plan your future

We all need to be our own futurists. In a busy world, we must carve out proper time to consider how our skills and our dreams will fit with an economy that is swiftly changing. We must work today to prepare ourselves for the jobs and opportunities of the future, transitioning from our past career to our future careers.

Carefully choose your expertise

Our livelihood tomorrow will be shaped by what we study today. To stand out, we should aim to excel at one or two specific areas of work, at which we can become an 'expert'. It is important to follow your passion, but also to consider whether the skills you are developing will still be valuable in five, 10 or 20 years' time.

Fuel your appetite for learning

We all need to keep learning throughout our lives to keep ahead in this fast-changing world. Rather than this feeling like a chore, we need to make learning something we want to do. Discover what you most want to learn about, and design it to be as fun and social as you can.

Families

Learn how to learn

There is no more vital capability for the future than the inclination and ability to learn. Many children start to associate learning with tedium. They need to discover the joy of learning by focusing on what they love best, whether it appears useful or not, and actively develop the habits and routines that will allow them to apply their learning skills to any topic they choose.

Nurture human capabilities

While specific skills in STEM and other areas will be in demand from employers, the most valued attributes will be personal capabilities such as adaptability, resilience, optimism, creativity, emotional intelligence and judgment. Learning skills is critical for children, developing into well-rounded adults is even more important.

Prepare for future jobs, not today's jobs

Careers advisors are one avenue to seek guidance when preparing for your future, however, as we live in a constant state of change it's also important to do your own research to consider whether careers you might pursue may still exist in decades to come, and where the new work of the future may emerge.



Organisations

Envisage your successful future organisation

Today's companies will fail if they simply try to eliminate some jobs and add others. Every single work role will change in the future, shifting to draw more on uniquely human capabilities. Becoming tomorrow's successful organisation requires a clear vision of the skills and roles you will require, and planning how to transition your current team from where they are to where they need to be.

Design work to tap your employees' potential

As human capabilities come to the fore, organisations should aim to tap the broadest possible scope of their staff's capabilities. In a flexible organisation, the best ideas and skills can come from anywhere, bringing out everything people can contribute. Well-designed collaboration will create outcomes that individuals could not achieve alone.

Hire for human capabilities, enable continuous learning

Find people who are flexible, imaginative, empathic and hungry to learn. The best way to attract the most talented is to give them the opportunity to learn continuously. Offer formal learning, but also design work, so your staff develop their knowledge and skills every day.

Foster a growth mindset

In a rapidly changing world, children as well as adults of all ages must understand that they can develop and increase their capabilities through study and perseverance. What we learn from our experiences is not what we are able to do, but how we can get better at creating our own personal success.

Prioritise financial acumen

Ensure children understand the value of money from a young age by talking about your own money situation with them: how it is earned, spent, invested or donated. Provide opportunities for children to earn pocket money by doing jobs around the home, and open a fee-free savings account for them to save a portion of their pocket money each week.



Looking forward

As one of the nation's biggest employers,¹⁵ Commonwealth Bank has a responsibility to help Australians get ready for the future. We recognise Australia's skills shortage in the fields of science, technology, engineering and mathematics and are committed to addressing these concerns to make sure Australia has the talent to take on the challenges of the future and create an innovative, competitive economy. We are investing in partnerships and programs with education providers to make sure our young people are well prepared.

We are excited to see new and evolving teaching methods across all levels of education and that our talented teachers are responding with innovation to the changing needs of our times.

There are challenges and opportunities ahead. We want to support our young people to take on those challenges and make the most of the opportunities so that Australia can have a productive and competitive future.

Kylie Macfarlane
General Manager Corporate Responsibility
Commonwealth Bank

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The Commonwealth Bank Teaching Awards are run in partnership with education not-for-profit Schools Plus to recognise teacher and school leader excellence. www.teachingawards.com.au

