

The Future of Education

DISCUSSION BRIEF 03



Caloundra City
Private School

Discussion Brief Number 03



Extension Activity

We invite you to view 'How the Future Works: Why your ultimate job is to be human', by Futurist, Gerd Leonhard:

in which he explains the increasing value of exclusively human skills. His logic is simple. Our young people should not try to compete with AI and other 4IR technologies for jobs where machines have the advantage. They should compete for jobs these technologies cannot do as well as humans by equipping themselves with a set of skills machines cannot replicate. Ample opportunities await school leavers who specialise in doing what computers cannot do.

Transferable Skills

The first two briefs introduced 4IR, VUCA, The Age of Agility and the concept of Jobs to Be Done. These briefs were not intended to cause anxiety, but to establish a common language and understanding of the world our students will inherit. We have on several occasions emphasised the need to promote optimism in the young because, with the right set of attitudes and skills, they can lead very successful lives.

These skill sets have been given many names, such as 'Human Skills', 'Soft Skills', '21stC Skills', 'Entrepreneurial Skills', 'General Capabilities' (in the Australian Curriculum), 'Pillars of the Curriculum', 'Transversal Skills', 'Transportable Skills' and 'Transferable Skills' (the name we will use). We avoid using the term '21st C Skills' because it ignores the fact that many of them were considered important pre-millennium. It also overlooks the fact that we are approaching the middle, not the beginning, of the 21st century. (We have added the bold print to highlight them.)

The 2019 report by Burning Glass Technologies⁽¹⁾, in which they surveyed almost twenty-six million US job vacancies to identify the most common requirements of potential employers, was particularly interesting. These are illustrated in in the following table:

Baseline Transferable Skills identified in Burning Glass’s Review.

Skills	Total Openings	Rank
Communication	8,657,707	1
Problem Solving	5,776,671	2
Collaboration	4,997,561	3
Creative and Critical Thinking	4,543,580	4

Burning Glass found that **Communication, Problem Solving, Collaboration and Creative and Critical Thinking** to be the top four baseline transferable skills required in millions of job openings. Other technical and profession specific skills were also identified in the review, but these four baseline or ‘human’ skills were applicable across a range of occupations. Applicants with these skills had a competitive advantage over others.

Closer to home, the Business Council of Australia identified what employers are looking for in potential employees. Their list was classified as follows:

Values

Accountability, continuous improvement, honesty, knowledge, respect, tolerance, and work ethic.

Behaviours

Adaptable, authentic, business-minded, collaborative, customer focused, flexible, globally aware, self-aware, and resilient.

Skills

Business literacy, critical analysis, data analysis, digital technology, literacy, numeracy, problem solving, and technical skills.⁽ⁱⁱ⁾

Many other reports highlighted the need for educators to prioritise the development of such skills. In 2021 the OECD highlighted the importance of a set of ‘transversal’ skills and ‘cognitive’ skills:

Evidence from online job vacancy data reveals that **communication, teamwork and organisational skills** are among the transversal skills most frequently demanded by employers in a wide variety of occupations. **Cognitive skills, such as analytical, problem-solving, digital, leadership and presentation skills are also highly transversal across jobs and work contexts.**⁽ⁱⁱⁱ⁾

Deloitte and the Global Business Coalition for Education distinguished between ‘Workforce Readiness’, ‘Soft’, ‘Technical’, and ‘Entrepreneurial’ skills. They noted that the 4th Industrial Revolution:

increases the need for “essential human skills” commonly referred to as “soft skills” that include **creativity, complex problem solving, relationship building, communication, emotional intelligence, and critical thinking**. In addition, youth also note the growing need for courage, resiliency, adaptability, and resourcefulness...Due to innovations in work—microloans, co-working spaces, global interconnectivity, and platforms to cover benefits previously tied to centralised employment— entrepreneurship will likely provide a unique opportunity for youth across the globe to bypass barriers to entry into traditional employment. It will also provide an opportunity to leverage local knowledge and resources. Some young people will move between formal and informal work; entrepreneurial skills could help them better navigate these changes and could better position them for future job opportunities.

The OECD took the same view, noting some specific capabilities:^(v)

To prepare for 2030 people should be able to **think creatively, develop new products and services, new jobs, new processes and methods, new ways of thinking and living, new enterprises, new sectors, new business models and new social models**. Increasingly, innovation springs not from individuals thinking and working alone, but through **cooperation and collaboration with others** to draw on existing knowledge to create new knowledge. The constructs that underpin the competency include **adaptability, creativity, curiosity and open-mindedness**.

The 2018 Gonski Review drew this issue to the attention of the Australian government when it recognised:

School education must also prepare students for a complex and rapidly changing world. As routine manual and administrative activities are increasingly automated, more jobs will require a higher level of skill, and more school leavers will **need skills that are not easily replicated by machines, such as problem-solving, interactive and social skills, and critical and creative thinking**.^(vi)

The World Economic Forum predicted skills that would be trending in 2022^(vii). The trending list included **analytical thinking and innovation; active learning and learning strategies; creativity, originality, and initiative; critical thinking and analysis; complex problem solving; leadership and social influence; emotional intelligence; and reasoning, problem solving and ideation**.

Graduates with high levels of self-efficacy who can apply their transferable skills will be equipped to seize opportunities generated by 4IR. Those who are not will be left to contend with a never-ending cycle of disappointment. Given the nature of these transferable skills, it should come as no surprise to discover that in 2017 Burning Glass Technologies

revealed that Liberal Arts students with additional technical skills qualified for almost twice as many job openings as those who didn't have them.^(viii)

It is therefore appropriate for schools to focus on three skill sets – the transferable, AKA 'soft' or 'human' skills, the 'entrepreneurial' skills (notwithstanding the need to overcome the risk aversion that is inherent in many education systems) and, in my view, 'workforce readiness' (which is the subject of another brief).⁽¹⁾ Let's now look at these transferable skills in more detail. (We have made occasional reference to Stephen Covey's 7 Habits of Highly Effective People^(ix) to illustrate one of the best-known programs that foster many of these skills.)

1. A Global Perspective.

Graduates will be simultaneously competing and collaborating with individuals and organisations from across the globe. As citizens, they should be aware of global issues, their likely impact on the planet and its inhabitants, and understand their individual and collective responsibility to address the causes and consequences of these issues. At its height, this awareness and sense of responsibility takes the form of cosmopolitanism (global citizenry). At the other end of the spectrum sits individualism and tribalism, which are unhealthy, dysfunctional, and ultimately detrimental to graduates who, whether they like it or not, will be globally interconnected with their contemporaries from different races, cultures, religions, and language groups. In their 2021 report 'Preparing Tomorrow's Workforce'^(x), the Asia Society cited The World Economic Forum, the National Association of Colleges and Employers, Deloitte and the Global Business Coalition for Education (which we will also cite in the upcoming discussion about work readiness) to support their call for a greater focus on global competence as a way of preparing young people for the 21st Century workforce.

¹ There are several reports that present lists of occupations forecast to decline or increase as a result of automation and AI. I have not dealt with these in detail because the detail could distract us from the role to be played by schools, which is not to train students in highly technical skills for jobs that

They produced a model to illustrate the Four Domains of Global Competence, which is presented below:

The Four Domains of Global Competence.



The first of the four components is 'Investigate the World'. This involves awareness, curiosity and an interest in learning about the world and how it works. 'Recognising Perspectives' requires students to understand their views may or may not be shared by others. It is the differences, not the similarities in perspective that makes for a more interesting, innovative, and dynamic world.

'Communicating Ideas' involves linking with diverse audiences. (This links to another transferable skill – multi-faceted communication.) The fourth component involves students using their knowledge and skills to 'Take Action' that makes a positive difference to the world. The society is prepared to share resources to assist educators and learners.

Learning about the world is important, but the best learning takes place when students are immersed in the world through personal experience. Digital communication provides many opportunities for students from different backgrounds to communicate and learn from each other, but the best experiences require them to get their hands into the clay of the world, either through travel or by developing relationships with people with different cultural backgrounds on and off-campus. In multicultural Australia, these people live next door.

2. A Futures Orientation.

Despite everything we hear, the future is somewhat predictable, as we have seen in the material we presented about the future of work. These forecasts are not seen in crystal balls, but in the application of logic to economic, technological, and social developments that are in plain view.

Several forecasters discuss the need for young people to be entrepreneurial (creating new business ventures), or intrapreneurial (creating new opportunities within existing business ventures). Those who are not entrepreneurs or intrapreneurial will need to constantly adapt to changing circumstances; moving from job to job, employer to employer, industry to industry and place to place as the demand for labour shifts.

The implication is that graduates will need to orient themselves to the future by keeping one eye on what is approaching just beyond the horizon. The task is made easier thanks to organisations like the World Economic Forum and Burning Glass Technologies, which analyses millions of job vacancies every week and identifies the skills most in demand. Somewhat ironically, the study of history and philosophy can equip students with the ability to identify patterns of human behaviour and orient them to the future.

3. A Capacity to Work in Teams.

Employers value employees who work collaboratively. Effective collaboration requires team members to share a common goal, to value each other's ideas and contributions, to be aware of and complement each team member's strengths and weaknesses, to seek out and value differences of opinion, to reflect on progress and revise processes as required, to establish and adhere to agreed protocols and procedures, and to celebrate the team's achievements.

There are wellbeing implications to collaboration. Buckingham reported findings from research he and his colleagues at ADP Research Institute conducted into resilience and engagement. After analysing data from the 26,000 survey participants drawn equally from 25 different countries, they concluded:

It is almost impossible to be either engaged or resilient if you do not feel like part of a team. Those who said they are on a team were 2.6 times more likely to be fully engaged and 2.7 times more likely to be highly resilient than those who didn't identify as team members. For millennia, humans have experienced psychological well-being only when

they feel connected to and supported by a small group of people around them — whether that group is a family unit, a small band of hunters and gatherers, or a hyperlocal team at work. Human flourishing happens through team flourishing — and if there's no team to be had, engagement, resilience, and excellence are nowhere to be found.^(xi)

Working in teams has two benefits for students. It equips them with important transferable skills, and it builds resilience and promotes better mental health.

When working well, team members will seek a Win/Win (Covey's 4th Habit) outcome, they will Seek First to Understand, then to be Understood (Covey's 5th Habit) and demonstrate integrity, maturity, and abundance mentality, three of the leadership traits identified by Covey. Great collaboration creates a synergy (Covey's 6th Habit). All graduates will be (are already) required to collaborate at work and at university, yet teamworking skills are rarely, if ever, taught. Managers, lecturers, tutors, and teachers assume that the new intakes of employees or students have developed these attributes by happenstance.⁽²⁾

4. Creative Problem Solving.

Creativity is not the exclusive domain of the arts. Students can be taught (or retaught or not untaught)⁽³⁾ how to think creatively. There are plenty of established tools that can be employed, such as 'Thinking Hats'. The real challenge lies in building a culture in which it is OK to fail, so long as you 'fail forward' (learn from the experience). There is an obvious link here to resilience and self-efficacy.

² One way to do this is to create an interdisciplinary subject called Team Projects.

³ Visit any Prep class in any school to witness every child's innate creativity before it is taught out of them.

We all talk about creative problem solving while contributing to an educational model that discourages and occasionally punishes creativity and its associated risk-taking. Until this changes entrepreneurs and intrapreneurs will be the exception rather than the rule. They will succeed despite their education and not because of it. We should assume every student could be the next da Vinci and liberate their minds accordingly.

5. The Ability to Apply Interdisciplinary Knowledge & Skills.

Unfortunately, the traditional approach to schooling compartmentalises knowledge and skills into subject areas. Time constraints and the timetable perpetuate this problem because students are given insufficient time to apply what they have learnt to solving real world problems, especially in the senior years. Teachers who are responsible for assessing agree that it would be great to collaborate with other subjects, but they frequently feel they do not have enough time to satisfy their own accountabilities. Subject silos do not apply in innovative workplaces, so school graduates need practice in applying interdisciplinary thinking individually and as part of a team. The best way to learn is to apply knowledge and skills to projects, which take time to develop. What stands out as the most effective learning experiences in your own time at school? I bet it wasn't the time you spent an hour reading a textbook or listening to a teacher.

The learning accelerates and consolidates when students work on well-planned and well-resourced projects, and they are given time to think.

6. A Learning and Social Network that Extends Beyond the Classroom.

Teachers are no longer the gatekeepers of knowledge, although many teachers are late to leave the stage. The problem (or one of them) with some school-based assessment systems is they encourage students to be dependent on their teachers who write and mark assessment pieces. This is not the teachers' fault; it's just how the system works. This in turn disincentivises

students who might otherwise access a multitude of other sources of learning, including the Khan Academy and some high-quality MOOCs, which have millions of active users. Some of these cost to access, but most are free. School graduates must have the will and the skills to access learning where and where it is needed because an employee who takes the initiative is more valuable than one who waits for training to be spoon fed.

Social networks are a different issue, and to some extent they require us to teach basic manners and appropriate behaviour, as well as how to communicate digitally and face to face. This is another skill that requires coordination between school, home, work, and the broader community. Julia Freeland Fisher from the Clayton Christensen Institute wrote an excellent book about the need for students to develop social networks, in which she noted the benefits of loose (casual connections) that often lead to opportunities.^(xii)

Teaching students how to harness the power of LinkedIn (or a similar digital network) would be a good place to start, but we must ensure that students also have the confidence to communicate face to face. Regardless of the portals they use, families and schools must work together to promote the development of character that forms the foundation for the growth of social networks. Character will distinguish those who 'fake it till they make it' from those with the ability to make valuable contributions over the long term.

Students use digital networks extensively every day, but educators need to teach them how to select and employ networks for learning.

7. Literacy and Numeracy as the Building Blocks of Learning.

For the moment we should agree that little can be done if students do not have solid foundations in literacy and numeracy⁽⁴⁾. However, we must stop assuming these skills are present just because a student moved up a year level every New Year's Day. (The fragility of this assumption will be explained when we look at proficiencies in Discussion Brief 5.) The problem is common

in many developed economies. In Canada, for example, the World Economic Forum estimates that '42% of the workforce have literacy levels below those needed to be fully effective for the positions they hold'.^(xiii)

8. Familiarity with Scientific Processes (including computational thinking).

An understanding of the scientific process, and the ability to distinguish between opinions, theories, and facts by considering evidence (verified data) is a platform for the development of informed citizenship. In a world simultaneously awash with conspiracy theories (believe anything) and scepticism (believe nothing), we need to provide tomorrow's decision makers with the skills required to draw informed and ethical conclusions.

Digital skills and computational thinking are contemporary skills highly valued by many employers. (Universities don't ask that school students are taught a particular coding language, but they are equipped with the skills to learn one or more as required.)

9. Multi-faceted Communication Skills, including ICT.

Graduates will need to employ a range of communication skills – written, verbal, aural, visual, non-verbal, and digital (including using social media effectively). PowerPoint is still a useful tool, but there are many more interesting ways to communicate ideas.

Protocols as well as skills should be taught. The forgotten part of communication is the ability to listen (Covey's 5th Habit; Seek First to Understand, Then to be Understood). Listening and thinking before speaking or texting are skills that are rarely taught and not commonly practiced in society.

10. Self-Mastery.

Self-mastery is the key that opens the potential in students, and even though we have placed it 10th on this list, we believe it to be the most important. Self-mastery is a set of skills that equip graduates to be lifelong learners who find and seize opportunities to refresh their skills as the labour market evolves. We believe self-mastery is the key to agility. According to the World Economic Forum:

In the absence of ready talent, employers surveyed through the Future of Jobs Survey report that, on average, they provide access to reskilling and upskilling to 62% of their workforce, and that by 2025 they will expand that provision to a further 11% of their workforce. However, employee engagement into those courses is lagging, with only 42% of employees taking up employer-supported reskilling and upskilling opportunities.^(xiv)

Evidence suggests that a significant percentage of the labour market suffers from some form of inertia, which will be addressed again in the discussion about resilience and self-efficacy. It follows that graduates with a 'want to and can do' attitude will have a competitive advantage, but this is not a new phenomenon.

Peter Senge identified self-mastery as the first discipline in his famous book *The Fifth Discipline*^(xv) more than three decades ago. According to him:

Personal mastery is a discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively.

There are four interconnected components of self-mastery, and these are discussed in detail later. They are:

⁴ AI has developed to a point where text can be read and analysed, and voice recognition can transfer speech into text. It is therefore likely that these skills will be less important in the future.

- Understanding of self (self-reflection).
- Self-regulation.
- Self-renewal (resilience).
- Self-efficacy.

If you ask a room full of students, or employees, or members of a sporting club to identify some of the people they admire and explain why they are so admired, they will no doubt tell you “Because they have their act together!” Someone has their act together when they know who they are and are guided by a set of values and principles. Covey described these people as having a Private Victory through the mastery of his first three habits – Be Proactive, Begin with the End in Mind, and Put First Things First (each of which is founded on a universal and enduring principle). Covey correctly argued that one cannot have a Public Victory (influence over others) until one has a Private Victory. The first habit, Be Proactive, is foundational and the hardest to obtain.

As we noted earlier, there are many lists of transferable skills, but we believe these ten will provide graduates with ‘the edge’ referred to in Discussion Brief 2. There are a few points to note. Firstly, very few items on the list are new, but in the past, they were the attributes of leaders. We are tempted to claim that they now apply to followers, but that would be wrong because one of the messages to come from the first two briefs is that to be successful, every citizen of 4IR must be a leader – a leader of ideas, of innovation, of a positive workplace culture, the list goes on. Most importantly, they must be a leader of their own destiny. In the words of Covey, they must obtain a Private Victory.

It is well within our ambit to foster these skills in the students of CCPS but doing so will require us to work together and make them a priority. This does not mean we forget about ATAR scores (that day will come for all students in every Australian school, but not yet), but it does mean we need to create a culture in which they can germinate and grow. At last, we have found amidst the VUCA

a set of values and skills that AI cannot teach or replicate and, as wise adults, we have regained our capacity to help the people we care about the most.

An effective partnership between the on-campus team at CCPS and parents is essential.

Encouraging and guiding our students on the road to developing these skills requires us to send a consistent message about their importance. The on-campus team can take a lead, with you in a supporting role, with the ten skills listed above, but the roles should be reversed for the eleven listed below, plus ones you might want to adopt from last week’s parent survey. We believe you should take a lead on these because most of them are about character and the rest can be modelled at home. Young people learn a lot from watching their parents and from dinner table conversations. (We have added some suggestions for you to consider.)

The ‘jobs to be done’ is to equip young people to be:

- Vision driven, with the ability to set and review their own goals as circumstances demand. Talk about your own goals and the circumstances that cause you to refine them. The age old question – ‘What do you want to be when you grow up’ isn’t asking a young person for a commitment, it is inviting them to form a vision.
- Aware of the workplace and changes occurring outside of the workplace that may impact upon it. Give your children and insight into your workplace and the environment in which it operates. We encourage more mature students to engage with high quality news (e. SBS World News at 6:30 pm, 4 Corners, Foreign Correspondent etc.)
- Proactive – willing to choose their response to life events. We are all human, but try to avoid being reactive, and when you are, explain how you might choose a different response next time. ‘Stop, Think, Act’, ‘Sleep on it’, and

'Count to ten before you say anything' are all sage advice given to our great grandparents, but they still apply today.

- Imaginative and creative rather than having tunnel vision. There are lots of games that encourage these skills.
 - Adaptable and keen (more than willing) to learn about new roles and how they fit within the organisation and the 4IR workforce. Once again, discuss what is happening in your own workplaces. Explain how they can take on new roles to help the family.
 - People with high levels of self-efficacy – belief in one's ability to learn. When your child loses confidence, take them back to the last task they performed with confidence. Think about how you taught them to kick a ball, ride a bike, hammer a nail, cook a meal, or mow the lawn. When they had trouble with the next stage, you took them back to where they felt comfortable and rebuilt from there.
 - Collaborative and willing to work as part of a diverse team. Your family is the most important team in their lives.
 - Resilient – able to bounce back from disappointments. Another vexed issue to be unpacked later.
- Courageous and willing to accept responsibility. Point out where they are being given responsibility in the home.
 - Prepared to 'fail forward' by trying something different, occasionally failing, and learning from mistakes. When next they fail, ask them what they would do differently next time.
 - Equipped with a solid set of proficiencies, particularly literacy and numeracy, that will enable further learning. You taught them to read, and they learnt to speak by modelling you.
 - Loyal to their resume. They will accumulate evidence of the skills that make them attractive to a potential employer. This will ensure they have options when they decide to change roles or employer. Young people have lots of skills (great sense of humour, good listener, empathetic, loyal, brave etc.), but they don't necessarily recognise them as such.



Extension Activity

This video is not going to win an Academy Award, but it does give you some tips on how you, as a parent, can help your child identify transferable skills they already possess.

Additional video below:



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