Changing work requires new skills and learning methods

New Skills

There have been many reports emphasising the need for different skill sets and capabilities for people to thrive in a future technology-rich, globalised, competitive world. The required skills are variously referred to as future skills, 21st century skills, enterprise skills, or enabling skills. This paper refers to them as 'enterprise and social skills'. Enterprise and social skills are the skills that a person will need in order to thrive in the twenty-first century, not just in work, but also in life. While these skills are not necessarily new, they are seen as increasingly important given ongoing change in the nature of work. The Productivity Commission states that for many future jobs, these kinds of skills will be needed as part of core competencies.[1]

In its paper, *Connecting for Productivity*, the Ai Group asserts that employers are seeking 'graduates who develop in-depth disciplinary knowledge but also develop skills and abilities not simply specific to one area'.[2] Australia's Chief Scientist, Dr Alan Finkel AO, has also emphasised the importance of T-shaped workers. He explained that the vertical line of the T represents deep expertise in a discipline, which should be acquired first. The horizontal line signifies the flexibility to apply that expertise creatively, as part of a team in a workplace, and to develop new skills as opportunities present.[3]

The Business Council of Australia (BCA) has noted that a qualification based on just technical skills and knowledge is unlikely to be enough, as employers are looking for workers with a mixture of skills, values and behaviours.[4] BCA's report, *Future Proof, Protecting Australians through Education and Skills,* shows the mix of skills, values and behaviours the BCA believes are required for work readiness.[5] In addition to these, the Foundation for Young Australians (FYA) stresses the need for entrepreneurial[6] and career management skills for effectively preparing young people to navigate through multiple jobs.[7]

Enterprise and social skills debate

Enterprise and social skills may be attractive in an employee, but there is less certainty about how they may be acquired through the education system

There is debate about 'social' skills:
- whether they reflect personal attributes and personality traits
- how they are to be defined
- which are the most critical skills to focus on
- whether they are transferable across different contexts
- whether they can be taught and assessed through the education system
- whether they can be considered legitimate learning outcomes in their own right.

[1] Productivity Commission, Shifting the Dial: 5 year Productivity Review, 2017, p. 87
[2] Guest, D. as cited in Connecting for Productivity: University and industry partnerships, Ai Group, 2016, p. 2
[3] Finkel, A., Raising Twenty-First Century Citizens, Australian Science Teachers Association Annual Conference (CONASTA 67) Keynote Address, July 2018, p. 4
[4] Business Council of Australia, Future-Proof: Protecting Australians Through Education and Skills, 2017, p. 7, 15, 18
[5] Business Council of Australia, Future-Proof: Australia's future post-secondary education and skills system, August 2018, p. 41
[6] The Foundation for Young Australians, The New Work Order: Ensuring young Australians have skills and experience for the jobs of the future, 2017, p. 2
[7] The Foundation for Young Australians, The New Work Reality, 2018, p. 9

Some argue that social skills are not actually skills but a cluster of personality traits, social graces, communication, personal habits, friendliness, managing people, leadership, etc. that characterise relationships with other people.[8] There may be difficulty in teaching these traits because they are not based on knowledge[9] and they are not easily quantified and measured.[10]

Buchanan et al. suggest that these skills cannot be acquired in isolation from knowledge of the domain in which they will be applied.[11] For example, an effective 'problem solver' in a preschool kindergarten may have little to contribute to solving the problem of an uncontrolled fire on an oilrig. Equally a highly skilled mining engineer may not be able to solve problems in a preschool.[12]

Lamb et al., suggest that all of these skills can be learned and developed, although they are better considered as partly context, or content, dependent rather than purely generic.[13] For example, being skilled in creative and critical thinking in mathematics may not translate into creative and critical thinking in English.[14]

Some people suggest that it is possible to teach these skills by providing facilitating environments or interventions like coaching, training and leadership development.[15] Others suggest that these skills cannot be taught by demonstration; they need to be taught by participation.[16]

There is an issue around establishing valid and reliable measurement and evaluation tools for these skills, which is a critical hurdle for the education and training system.[17] Experts argue that 'social' skills are difficult to measure using objective,[18] direct assessment (measurement tends to mostly rely on self-reporting).[19] The assessment and evaluation of 'social' skills is considered as a major challenge because the theory and measurement of these skills is still very much 'in its infancy'. Some researchers consider that the rich body of experience, as we have with how to teach and assess literacy and numeracy, doesn't yet exist for things like 'creative thinking or 'resilience' etc.[20]

There is also no way to ensure that the successful acquisition of 'social' skills by students is definitely going to result in them successfully applying these skills, behaviours and values in their life and work.

New teaching and learning methods

Changes in technology are also changing ways of teaching and learning.[21] The Ai Group has predicted the need for faster, cheaper and on-demand delivery of new learning experiences to cater for the skills needed in the future workforce.[22] We are already seeing increased use of online education (for

[8] Marchant, J., Why you can't teach soft-skills, 2015

[9] National Soft Skills Association, Why the Reluctance to Teach Soft Skills?, 2015

[10] Marchant, J., Why you can't teach soft-skills, 2015

[11] Buchanan, J. et al., Future Frontiers Analytical Report: Preparing for the best and worst of times, 2018, pp. 24-25

[12] Buchanan, J. et al., Future Frontiers Analytical Report: Preparing for the best and worst of times, 2018, p. 25

[13] Lamb, S. et al., Future Frontiers Analytical Report: Key Skills for the 21st century an evidence-based review, 2018, p. 4

[14] Lamb, S. et al., Future Frontiers Analytical Report: Key Skills for the 21st century an evidence-based review, 2018, p. 4

[15] Chamorro-Premuzic, T., Can You Really Train Soft Skills? Some Answers From The Science Of Talent, 2018

[16] Eastlake, M., Soft skills can't be taught... but they can be learned, 2015

[17] Lamb, S. et al., Future Frontiers Analytical Report: Key Skills for the 21st century an evidence-based review, 2018, pp. 4-5

[18] National Soft Skills Association, Why the Reluctance to Teach Soft Skills?, 2015

[19] Lamb, S. et al., Future Frontiers Analytical Report: Key Skills for the 21st century an evidence-based review, 2018, pp. 4-5

[20] Lamb, S. et al., Future Frontiers Analytical Report: Key Skills for the 21st century an evidence-based review, 2018, p. 47

[21] Productivity Commission, Shifting the Dial: 5 Year Productivity Review, 2017, p. 67

[22] Ai Group, Connecting for Productivity: University and industry partnerships, 2016, p. 3

example Massive Open Online Courses), and the rise in popularity of micro-credentials and digital badges.

Online learning is gaining popularity because it is either free (not including certification of skills and knowledge acquired) or may be less costly (including certification of skills and knowledge acquired) compared to face-to-face learning.[23] It is also better suited for people 'who are working, have caring responsibilities, are geographically distant, or who want to undertake a course at a speed that suits them'.[24]

The demand for short courses or micro-credentials appears to be increasing. This is because they are short, available just-in-time[25] and suitable for upskilling workers based on changing market needs,[26] which may enhance job security. Shorter forms of learning are also suitable for incrementally acquiring skills and knowledge over a person's career (life-long learning).[27] These credentials could be combined to build formal qualifications.[28]

[23] Productivity Commission, Shifting the Dial: 5 Year Productivity Review, 2017, p. 97
[24] Productivity Commission, Shifting the Dial: 5 Year Productivity Review, 2017, p. 97
[25] Obvious Choice, Micro-learning accessed 06 May 2018
[26] Productivity Commission, Shifting the Dial: 5 Year Productivity Review, 2017, p. 97
[27] Productivity Commission, Shifting the Dial: 5 Year Productivity Review, 2017, p. 97
[28] PhillipsKPA, Contextual Research for the Australian Qualifications Framework Review, 2018, p.139