Australian graduates' work readiness - deficiencies, causes and potential solutions

Introduction

Deficits in graduates' work readiness (GWR) have been widely reported in both emerging and advanced economies, leading to high youth unemployment and underemployment (ILO, 2015). Australia is one of the advanced economies where higher education graduates suffer from work readiness deficits, and they are becoming more pronounced over time (Bennett, Richardson, and Mackinnon, 2015; Dowling, Rose and O'Shea; 2015; Harvey and Shahjahan, 2013; Jackson, 2016; McDowell et al., 2013, Sarkar et al., 2016; Smith and Trede, 2013).This is highly concerning given the advent of the Fourth Industrial Revolution (4IR) where artificial intelligence (AI), robotics and machine learning will affect workplaces and occupations (WEF, 2017). The 4IR means that routine and unskilled jobs are at risk (Scarpetta, 2016, Taylor et al., 2014) and the challenge will be in developing effective skill transition and preparation strategies. (Deloitte Access Economics, 2018). To date, much of the research on the topic has identified the competencies graduates are considered to need to gain employment. The contribution of this study is the determination of competencies that graduates lack. The intention is that it will provide insights for higher education educators, industry and others who may collaborate in better preparing graduates for the workforce. To answer to assist this process, this study set out to answer the research question "what are the competencies that are considered to be lacking in Australian graduates" in addition to two related research questions: what are considered to be the cause of these competence deficits and how can these competencies be developed to improve graduate work readiness outcomes? Although the research relates to Australian graduates, there are commonalities in graduate work readiness that are evident globally (Cameron, Burgess, Dhakal and Mumme, 2018; Rich, 2015) that require attention from relevant stakeholders.

First, however, it is necessary to define graduate work readiness. The lexicon relating to graduate preparation for employment is confusing, with a range of terms used to refer to this process such as job readiness; work readiness; being workplace ready and employability (Goldin, 2015). The terms are often used interchangeably and refer to the effectiveness of the transition from graduation to employment. The other area of confusion concerns the identification of the competencies and skills that graduates are expected to possess (beyond their official certification) to access employment (Prikshat et al., 2019). These competencies are also interchangeably referred to as skills and attributes and, within the literature, they are recognised as important in supporting job entry (Barrie, 2006; Prikshat et al., 2019). The general concept of skills refers to the productive assets of the workforce that are acquired through learning activities (Toner, 2011) with employability skills defined as higher-order transferrable skills that are applicable and common to a range of contexts across all specific fields, and include communication, analytical and problem-solving skills, interpersonal relations and the ability to use information technology (Pitan, 2017).

Consequently, a disparate range of competencies (including attitudes and behaviours) exist in extant literature, both formal and informal in nature that are considered necessary for graduates to access employment. Moreover, due to the ambiguity and gaps around prevalent graduate employability constructs and frameworks (Smith, 2018), it is challenging to place these competencies in a theoretical context that can further support analysis and clarification. This has resulted in issues of both relativity and fluidity. While relativity is the extent to which graduates tend to compete against other graduates – new graduates from other universities and past graduates for existing jobs, on the other hand fluidity concerns are about the state of the labour market and changing work requirements according to fluctuations in economic activity and

technology. Thus, being work-ready tends to be conditional on the state of the labour market, and on the profile of job seekers at a particular point of time.

Despite these limitations, public discourse suggests that graduates require a formal qualification, plus a suite of other competencies that will improve their entry into the labour market. Analysis to date has largely concerned the identification of these graduate core competencies and suggestions concerning how they can be incorporated into the tertiary education system. Currently, it is not clear how: these skills and competencies are to be developed; whether they are "add-ons" to be embedded in existing programs; whether they are formally assessed and accredited and how their presence is, or will be, recognised by employers.

Hence, this study sets out to identify and systematise the skills and competencies that a range of stakeholders identify are required from graduates to access employment before discussing how tertiary educational institutions may be able to incorporate these competencies and skills into their existing programs. A multiple design process of data collection and analysis was used which involved stakeholders from three distinct groups - employers (industry personnel), educational institutions (VE & HE), and government (policy experts). The focus of the study was on those preparing graduates for the labour market, rather than the graduates themselves. The paper begins by considering a range of GWR challenges prior to outlining the Australian context for higher and vocational education. Next, the research methods, findings, conclusions and implications are presented.

Graduate Work Readiness Challenges

Graduate employability is of growing importance in higher education internationally and has relevance for a range of stakeholders; students, their families,

higher education institutions, employers, professional bodies, national governments and others (O'Leary, 2016).). The focus of this study is the transition of higher education (HE), and vocational education (VE) graduates into employment in Australia. In the Australian post-secondary education system there is a national qualifications framework (AQFC, 2013) that sets out the different formal qualifications recognised national – these range from certificates to PhDs. There are 10 different qualifications recognised that differ by duration, funding, purpose, and skills. In general, the VE sector provides graduates that meet the qualifications set from 1 to 6 (certificates and diplomas), while university provides qualifications for stages 7 to 10 (degrees to PhD)s.

The Vocational Education and Training (VET) sector is based on a partnership between governments (State and Federal) and industry. Industry, employer groups and associations assist in the development of training policies and priorities, and the development of qualifications is based on the development of skills that are of relevance to the needs of the workforce.

While the higher education system comprises universities and higher education providers that perform an important role in research, contributing to productivity through the provision of a range of skills while establishing a vocational pathway, especially to professions (Australian Trade and Investment Commission, 2019).

Unemployment and underemployment is a significant problem for graduates as they frequently cannot access secure, full-time work or find work in the occupations or professions for which they have been trained (Dhakal et al., 2017). In addition, graduate employment in part-time and temporary jobs with low entry and skill requirements that are contingent, insecure, not linked to career paths is widespread (Dhakal, 2017; ILO, 2015). There are tensions between education and training; the development of core attributes through education (numeracy, literacy, communications, critical thinking) and

training to meet specific job specifications for industry and professions. These fundamental labour market mismatches have resulted in many graduates being overqualified and possessing the wrong skillsets to access jobs. Moreover, the Foundation for Young Australians (FYA, 2016 citing the Graduate Careers Association 2015) stated that 29 per cent of higher education (HE) graduates employed in 2015 considered their academic discipline to be inconsequential to their employment. This indicates the need for closer partnerships between higher education and industry. Focussing on the supply side tends to place responsibility for these factors with graduates, training and educational institutions. This approach results in employers being largely absolved from responsibility in the public discourse, being presented as passive participants in the job matching process (Rothwell and Rothwell, 2017) which is far from ideal.

Labour markets are, of course, the "job markets" affecting the supply and demand for labour (Tsotsotso et al., 2017) as employees deliver the supply and employers the demand. Graduates are an important supply source for labour markets that are under stress on a global basis (ManpowerGroup, 2016; WEF, 2017). The overarching message from the World Economic Forum (Schwab, 2016, WEF, 2017) was that the accelerated impact on labour markets in terms of structural change is occurring at an increasing pace which is devoid of effective strategic responses. Thus, it needs to be "reconfigured" due to high levels of unemployment and unfilled jobs. (Schwab, 2016, WEF, 2017).

Based on several global surveys, the ManpowerGroup (2016) reports that the dysfunctional aspects of the labour market were prompting change as the "world of work" adjusted with new employment opportunities and economic growth occurred spurred on by the 4IR. Anticipated workplace changes concern the replacement of low, medium and some highly skilled jobs with artificial intelligence, robots and machine learning technologies (WEF, 2017). Key challenges posed by the 4IR lie in finding the right human

capital strategies which will require clear definitions of the knowledge, skills and competencies needed in the new global industry environment, as well as identification of the responsibilities of stakeholders such as governments, educators and industry managers in addressing them (Seet, Jones, Spoehr & Hordacre 2018; Gekara, Snell, Molla, Karanasios and Thomas, 2019). To date, there appears to have been little systematic, scholarly analysis of the impact of various processes associated with the 4IR. Subsequently, there is a need to confront labour/skill shortages with revised thinking by employers and policy makers (ManpowerGroup, 2016) placing research into graduate work readiness in a heightened context.

The rise of individual choice is characterised by millions of job offerings accessible by a click of a mouse with young people adopting a flexible attitude to work, underpinned by an expectation of seeking multiple careers and changing directions over lengthening working lives (ManpowerGroup, 2016). These changes align with the concept of "protean careers" which arose from the Greek God Proteus who could change shape at will, in common with the protean careerists who change themselves according to need (Donald, Baruch and Ashleigh, 2019; Wilton, 2014). As Donald et al. (2019) point out, the transition to work has become increasingly unpredictable due to changes in society, education, and the labour market. These changes require employees to develop transferable skills, reflecting a shift in responsibility for career management from the organisation to the individual for the development and redevelopment of employable skills to sustain employment with multiple employers (ManpowerGroup, 2016). This perspective is supported by Sullivan and Baruch (2009) who asserted in their study regarding advances in the nature of contemporary careers that apart from traditional full-time employment, part-time and multi-part time (portfolio) careers, short and long-term temporary employment, contracting and more are now commonplace.

Graduate Work Readiness Competencies

Australia must develop its education system to effectively respond to technological change and develop the skills required for a labour force to initiate innovation and growth (DAE, 2018). It is advocated that this includes increasing the availability of skilled ICT graduates to work in "emerging technologies and growth areas, such as AI and cyber security" (DAE, 2018, p.40).

The OECD defines work readiness as the need for "the right skills mix not only for the present but also for the future needs of dynamic labour markets" (OECD, 2011, p.11). The OECD (2011) categorises competencies as: foundation skills (literacy and numeracy), higher-level cognitive capabilities (problem-solving and analytical), interpersonal skills (communication), teamwork and negotiation, technological flexibility, learning skills, creativity and entrepreneurship (OECD, 2011, p.14-15). Connell and Burgess (2006, p. 499) also emphasised the importance of "portable" and "transferable" competencies, that allow employees to move more easily within or between organisations and industry sectors.

To date, research has been conducted in establishing various work ready competencies that employers seek (Ashman et al., 2008; Jackson, 2016; Male, Bush and Chapman, 2010; Peng, Zhang and Gu, 2016). The relevant competencies reportedly support the performance of tasks in specific work contexts resulting in improved job performance (Coll and Zegwaard, 2006; Crisp and Bennison, 2014; Gow and McDonald, 2000; Rahman et al., 2012; Jackson, 2009; Rothman, 2017; Spowart, 2011; Teijeiro, Rung and Freire, 2013). Graduates are expected to acquire such competencies during their studies as they are considered critical for industry sustainability and productivity in conditions of intensified global competition (Fenwick and Hall, 2016).

However, competencies are often provided as a list, without any clear articulation of how they were identified and classified, and without any prioritisation (Prikshat et al., 2019). They also tend to be identified as having equal importance with none being considered more important than others. Thus, the purpose of this article is to establish whether these competencies can be organised into a system of classification that provides a foundation for development and implementation within a tertiary education context.

Data collection

Stakeholders

The stakeholders referred to in this study were drawn from the following: firstly, the policy makers (government), comprising representatives from those bodies that regulate the labour market, set education strategy and policy guidelines, maintain appropriate infrastructure and establish monitoring systems. Second stakeholders responsible for the VE and HE systems that prepare graduates and thirdly, the employers, who seek work-ready graduates. These stakeholders were selected since they have direct salience (legitimacy, power and purpose) associated with issues related to graduates" attributes (Mitchell, Skinner and White, 2010). These stakeholders are required to assist with graduate transitions from tertiary education to employment. Specifically, it is in their self-interest to assist investment in education that leads to employment and national skill accreditation (government) with an available supply of graduates with the requisite skills to meet current and future labour force needs. Graduates were not included as stakeholders in this study since they are secondary stakeholders – specifically, their role is primarily as consumers of the pre-determined products of the government-industry-education system (Prikshat et al., 2019).

Methodology

This study used a multiple design process of data collection and analysis involving three distinct groups: employers (industry personnel), educational institutions (VE & HE), and government (policy experts) to provide a range of perspectives on graduate work readiness competencies. It was deemed important to elicit and distinguish between the views of VE and HE participants since in terms of the national qualifications framework they, in general, are responsible for delivering different programs with different purposes and different qualifications (AQFC, 2013). A mixed method sampling strategy was used to provide a sample for a meaningful comparison between the salient stakeholders. This type of sampling technique combines probability and purposive sampling to generate datasets that include both deep and broad information (Teddlie and Yu, 2007). In total, twenty participants were purposively sampled from the three stakeholder groups. They were selected due to their experience as educators, employers or policy makers. Due care was taken to include respondents from academia (HE & VE), who had more than ten years' experience and were aware of current work readiness issues faced by graduates. The employer/industry respondents comprised CEOs, managing directors and senior executives, while most of the government respondents who participated in focus groups were involved in policy making initiatives concerned with graduate work readiness. Four senior representatives were from the vocational and training (TVET) sector, four from the higher education sector, six from industry, and five from the government sector. Four participants were based in Sydney, three in Perth and twelve in Melbourne (see Table 1).

In-depth, semi-structured interviews and a focus group were used as a method of data collection. The purpose of the semi-structured interviews and focus group was to establish key work-readiness competencies based on stakeholder responses and to gain a deeper insight into Australian graduates competency deficiencies. Data from the

interviews and focus group were triangulated for data completeness and confirmation (Adami and Kinger, 2005; Halcomb and Andrew 2005).

Table 1: Focus group participants and interviewees

Focus group – 13 participants (Melbourne based)		
Stakeholders	**Interview codes**	**Job Title**
Vocational Education	MEL 1	CEO, Registered Training Authority (RTO)
	MEL 7	Education Manager Training and Further Education (TAFE) college
	MEL 9	Director of research and policy for an Australian TAFE Association
Higher Education	MEL 2	Director (University College Commerce Program)
	MEL 8	Deputy Vice Chancellor (University)
	MEL 12	Program Co-coordinator (hospitality, tourism)
Employers	MEL 10	CEO and founder, Australian and international recruitment firm
	MEL 13	Senior executive manager education and training - major employers' group
Government	MEL 3	Government Director in Education department
	MEL 4	CEO, Public Service Department
	MEL 5	Head of professional development (HRM)
	MEL 6	Head of government and media relations –Youth Employment
Interviewees – Sydney & Perth		
Vocational Education	SYD 2	TAFE Director
Higher Education	PER 1	Professor, University
Employers	SYD 3	HR Director, Manufacturing Company
	SYD 4	Managing Director, engineering, , and IT consulting company
	PER 2	HR Manager, Law Firm
	PER 3	Consultant, Oil and gas industry
Government	SYD 1	Principal Advisor, workforce/graduate recruitment and Policy

Data analysis

Qualitative data was analysed using an iterative process which involved moving between the data and an emerging structure of corresponding themes according to three key steps (Locke, 2001; Miles and Huberman, 1999). The first step comprised the creation of provisional categories and first-order codes. This comprised the identification of statements via open coding (Locke, 2001) regarding the work readiness competencies considered to be instrumental for gaining access to the industry in which graduates want to work. Next provisional categories and first-order codes/categories were developed. As theoretical categories were created, data was checked to determine whether the codes fitted the emerging abstractions. Where this was not apparent the "discrepant data" was reviewed and categories revised accordingly. This process was continued until all authors agreed on the thematic categorisation.

Refining the first order categories/codes allowed for the identification of second-order themes that were non-overlapping (Gioia and Thomas, 1996). The second-order themes were created based on existing literature around similar ideas, issues or observations concerning graduate competencies. Once second-order themes were generated from the stakeholder observations, dimensions were aggregated to determine how different themes were associated with a coherent picture. Once, a list of graduate work readiness competencies was established, the data were analysed to identify graduate work readiness competency deficits as well as the perceived causes of the deficits.

Findings

Graduate work readiness competencies

The findings were subject to categorisation and aggregation in a two stage process as set out in table 2. The terms skill and competency were used interchangeably by the participants. In

addition, there was no indication of the significance or ranking of competencies. The competencies identified were based on participant perceptions and not supported by evidence.

Table 2 summarizes the data structure presenting the ten key graduate work readiness competencies that emerged from the common observations of stakeholders. Also identified are the second-order themes and the first-order codes/categories that led to the formation of the final ten competencies. The interplay among the first-order categories and second-order themes was not straightforward, as some dimensions tended to be recursive and overlap with other dimensions. For example, the first-order theme "ability to fit better within the work context and culture" is grouped under the second order theme of "sustainability" but could have also been associated with "culture-organisation fit". For the sake of clarity, the emergent work readiness dimensions and related themes are referred to individually although their complexity and interactivity are acknowledged (Clark et al., 2010).

Table 2: Requisite work readiness competencies for Australian graduates

First - Order Codes/Categories	Second - Order themes	Aggregate competencies
• Capability to undertake collaborative projects and work in teams • Fitting in with the team is a priority • Understanding how to negotiate • ability to discuss problems with others	• Team work • Negotiation skills	**Teamwork and political competencies**
• Good project management skills, • Ability to work on complex problems • Critical analysis skills • Ability to think strategically • Ability to take decisions	• Problem-solving skills • Critical analysis skills	**Cognitive competencies**
• Professionalism and a strong work ethic • Culture adaptation at the workplace • Self-regulate own workload and work towards business goals • Ability to engage with co-workers • Has prior exposure to work	• Performance management • Culture - organisation fit	**Core business competencies**
• Good computer skills • Knowledge of various software used in business • Ability to fix hardware issues • Conscious of ethics when using social networking and other games/apps in work environment	• ICT literacy/fixing IT issues • Ethical issues surrounding the technology	**Information technology competencies**

• Self-management and organisation • Initiative/Resilience/Accountability • Proactive rather than reactive • Adaptable • Emotional intelligence • Sense of maturity	• Lifelong learning • Self-regulation	**Self-management competencies**
• Possess writing skills - meeting minutes, agendas, marketing blurbs, email communication • Ability to express ideas clearly • Ability to write and present with clarity	• Written skills • Verbal skills	**Communication competencies**
• Relevant combination of qualifications • Basic literacy and numeracy skills • Practical knowledge of how the industry operates	• Basic qualifications • Sustainability	**Foundation competencies**
• Energy and drive to encourage others at work. • Ability to address difficult issues/have difficult conversations • Potential to coach others • Ability to take initiative	• Charismatic • Managing relationships and taking charge	**Leadership competencies**
• Ability to express their creative skills • Ability to conceptualise new ways of working • Knowledge of latest trends in innovation • Potential to be innovators of the future • Ability to cope with change/uncertainty	• Entrepreneurship • Change-management	**Innovation and creativity competencies**
• Ability to read the economic/political/social/technical environment • Ability to work with/utilize relevant data • Ability to understand the big picture	• Awareness of big picture • Capable of managing within the organisation as a 'system'	**System thinking competencies**

Australian graduate work readiness competency deficits

All stakeholders reported both broad and specific concerns with the soft skill (interpersonal) competencies possessed by many VE and HE graduates. Industry stakeholders reported a greater deficit gap compared to other stakeholders. For industry/employer stakeholders, a lack of self-management skills, communication (written and oral) were the core business competencies of concern. The higher education stakeholders reported deficiencies in communication, self-management, team-work, cognitive abilities, system thinking, innovation and creativity competencies. The government respondents reported concerns related to a perceived lack of self-management, leadership, team-work and the political competencies of graduates. Vocational education stakeholders also endorsed the views of industry and government respondents observing that communication, self-management and cognitive competencies were

deficient in graduates, while also referring to a lack of competency in innovation and creativity.

Table 3 displays the work readiness competency deficits identified.

Table 3: Australian graduates' work readiness competency deficits

| Competency deficits | Dimensions | Stakeholders | | | | Total |
		Industry /employers	Government	Vocational education	Higher education	
Self-management competencies	- Self-management and organisation - Adaptability - Resilience - Accountability	8	5	2	4	19
Communication competencies	- Writing skills and written expression	7	3	2	5	17
Core business competencies	- Culture-Organisation Fit - Professional ethics - Prior exposure to work	7	-	-		7
Cognitive competencies	- Critical/ Analytical thinking/Decision-making	6	-	2	2	10
Leadership competencies	- Ability to take initiatives - Energy and drive to encourage other people to work -	6	5	-		11
Team work and political competencies	- Team work - Negotiation skills	6	4	-	4	18
Lack of innovation and creativity	- Expression of creative skills - Ability to cope with change	-	3	3	2	8

System thinking competencies	- Ability to conceive bigger picture - Ability to pull relevant data	-	-	-	2	2

*The table highlights the reported competency deficits and the frequencies that were quoted more than once by the stakeholders.

Lack of self-management (19 stakeholders), communication (17 stakeholders) and team work (18 stakeholders) competencies were identified by the majority of stakeholders as deficient in Australian graduates.

> "I actually think it's the lack of critical appraisal of their reflective skill of being able to adapt, managing self, to be able to read the environment and to be able to know what professionalism looks like while getting the feeling of the new place (organisation)." (HE)

Some of the other concerns of stakeholders regarding graduate deficiencies were related to a lack of cognitive abilities, core business skills and leadership, systems thinking competencies and lack of IT knowledge. Eight stakeholders also expressed their concerns about graduates' lack of innovation and creativity skills.

A deficiency in communication competence, especially written communication, was another theme, where respondents reported that graduates lack conceptualisation, argumentation and skills relating to logic.

> "The inability to express ideas clearly, to stand up and publicly present in a way that is concise, planned, gets the message across without boring people, and correct." (HE)

All the stakeholders observed that graduates lacked teamwork and political skills –
explaining that a test for graduates is to demonstrate their compatibility within an
organisation in terms of capability to undertake collaborative projects and fitting in with
the team culture:

> "A staff member working on an event may go and start writing an invitation to
> someone to be involved in a project without thinking that someone in that category
> might be useful for something a bit more strategic... ...that lack of communication
> and collaboration with the rest of the organisation.". (Employer)

Industry and government stakeholders referred to a lack of understanding of the cultural
nuances and ethics of work environments suggesting that graduates tend to put their
values ahead of the values of the institution/organisation.

> "…the new graduates that were coming through were a bit more fearless, maybe,
> and were willing to put their own values ahead of the values of the institution...more
> self-centred in their approach to that, and didn't necessarily show respect for their
> chain of command." (Employer)

Why perceived deficits?

While debating the causes and antecedents of these deficits, stakeholders also discussed
their shortcomings in addressing the problems. Ambiguity, a lack of systematic thinking
and the absence of shared responsibility on the part of employers and educational
organisations were blamed for the lack of any practical solutions being proposed to date.
HE/VE and government stakeholders noted that employers tend to treat graduates as a
potential problem, having a bias against young employees while not providing sufficient
opportunities for them to develop professionally.

Some stakeholders also noted that employers might have unrealistic expectations of new graduates. Vocational and higher education stakeholders also referred to the failure of employers/industry to assist in the development of graduate employability competencies because few organisations offer graduate training schemes. This situation was exacerbated following the privatisation of public utilities (energy, public works, and telecommunications) that were previously a source of apprenticeships, traineeships and graduate scholarships offering graduate career pathways within professions. The expectation was that this gap would be filled by the HE or VE sector. Numerous stakeholder participants observed that generally, employers consider work-integrated learning (WIL) internships and apprenticeships as a burden, rather than important sources of skill/competency development for new graduates. Even if graduates undertake such programs, it was reported that their allocated supervisors often just "tick a box" without knowing what has been done or how effective the intern has been.

Strategies for overcoming competency deficits

Identifying the perceived gaps in graduate work readiness competencies could be considered the first step towards addressing the issue. The political agenda is tilted towards HE institutions to improve GWR addressing many of the perceived GWR deficits through existing teaching and learning programs. The majority of the stakeholders that participated in this study perceived that Australian graduates lack self-management competencies and the Department of Education, Employment and Training, reported similar findings (GCA, 2012 Kirby, 2000). Previous research found that the employability skills of self-management, initiative, organisational and planning improved considerably, while graduates were working, rather than when they were at university (Whelan et al., 2010) although self-regulation and lifelong learning are often considered

an integral part of graduates "pre-professional identity" (Bridgstock, 2009; Henkel, 2005; Jackson, 2016).

Consequently, it appears Australian HE and VE institutions need to review their pedagogical focus to include design-led experiential and interactive learning, reflective analysis and competency-based curricula including the self-management skills that are considered to be crucial for Australian graduates (Bridgstock and Stuart, 2016; Conrad, Johnson and Gupta, 2007; Stefani, 2009). Further incorporation of specialised course curriculum focusing on self-assessment/awareness exercises, the evaluation of current skills, strategic career planning and development towards the enhancement of lifelong learning skills at different stages of education may also help to overcome the reported self-management competency deficits (Jackson and Wilton, 2016; Piazza, 2011).

In common with the findings reported here, interpersonal and communication skills (both written and oral) have previously been identified as key selection criteria by Australian employers (Bradley et al., 2008; GCA, 2014, p.27; West, 2012). Further development of communication skills could include, as suggested by the stakeholders in this study, oral case discussions, written case assignment papers, online case discussion boards, individual or team presentations that require quantitative and written analysis and report writing to help develop professional writing skills (Alstete and Beutell, 2016).

Perceived deficiencies in the teamwork and negotiation competencies of Australian graduates have also been identified previously (Carrier and Gunter, 2010; Di Gropello and Kruse, 2011; Jackson and Chapman, 2012; Mitchell et al., 2010; Nilsson, 2010; OECD, 2011; Prising, 2015,). Teamwork has also been identified as an important competency in recruitment and selection processes (AAGE, 2014; Australian Industry Group and Deloitte, 2009).

To a lesser extent creativity, innovation, entrepreneurship and change management skills were also identified as graduate deficiencies in this study. The education stakeholders maintain this is because there are scattered components of entrepreneurship spread across faculties with only a few education institutes offering full units of entrepreneurship and change-management with related content included in cross-curricula and programs. Maritz et al. (2015) provided an analytical overview of the current state of entrepreneurship education in Australia recommending that Australian education providers collaborate more effectively with international partners running entrepreneurship education programs.

Lack of cognitive skills (problem solving and critical analysis skills), leadership skills and core business skills (taking initiative, culture-organisation fit) also featured strongly as perceived graduate deficiencies in this study, in common with a range of extant Australian literature (Andrews and Higson, 2008; Carrier and Gunter, 2010; Di Gropello and Kruse, 2011; Jackson and Chapman, 2012; Mitchell et al., 2010). However, as discussed earlier, all Australian universities list these competencies as the specific learning outcomes of various programs (Kalfa and Taksa, 2015) indicating that perhaps more robust measures are needed to assess them.

Stakeholder general concerns indicated that graduates are either insufficiently, or only partially prepared, for the demands of the workforce (GCA, 2012; Knoch et al., 2016). The observation that some employers have unclear and unrealistic expectations of new graduates, considering them a potential problem, may be attributed to graduates ranking themselves as work-ready in areas where employers do not agree. In some areas, such as oral/written communication, critical thinking and creativity, students were found to be more than twice as likely as employers to believe that they are prepared for employment (AACU, 2015; Howieson et al., 2014). That said, it is important that

employers and industry agree to take a shared sense of responsibility in developing graduate competencies. This could be achieved through expanded work experience, cadetships, traineeships and induction programs. Given the diversity in competencies across industries, occupations and professions, employers cannot expect graduates to have a "complete" suite of competencies that enable them to fit straight into any job. Improved onboarding/induction programs, focused recruitment programs, effective supervision, coaching and mentoring to support graduates were some of the strategies identified where employers could assist graduates' work readiness competencies. Some of the more generic strategies suggested by the stakeholder respondents were - work-integrated learning (WIL), workplace internships and industry taking a more active role in developing curricula. This has been advocated in a range of literature to date (Allen et al., 2013; Brooks and Youngson, 2016; Fullana, et al., 2016; Gault, Leach, and Duey, 2010; Hoeckel, 2014; Jackson, Rowbottom, Ferns and McLaren, 2017; Smith and Trede, 2013; Taylor, Raykov, and Hamm, 2014).

Conclusion

This study set out to answer the research question "what are the competencies that are considered to be lacking in Australian graduates"? In addition to advancing understanding regarding the cause of the competence deficits and how they might be improved. The major work readiness deficits reported by the stakeholders participating in this study were competencies related to self-management; communication (written and expression); team-work and political competencies. The causes of these deficits were associated with a range of issues. These include expectation gaps between educational providers and industry, a lack of graduates self-awareness; employers' unclear expectations as well as a lack of industry engagement, training schemes, graduate support, on-boarding and

development systems. A reliance on traditional teaching methods and an absence of robust assessment mechanisms were also considered to be related to the educational learning outcome deficiencies. There are a number of strategies proposed here that could assist in improving these deficits. In particular, an integrated stakeholder approach is recommended supporting engagement between government, employers and higher education providers to improve and update graduates learning experiences.

The context of this analysis was the supply side, that is, the focus was on graduates, and on their transition to employment. In part, with a competitive and global higher education sector, it follows that tertiary institutions would embrace the work readiness agenda as a means of improving positioning in the higher education market. However, there are risks involved as they cannot control the demand side of the market or incorporate international graduate labour markets. Moreover, it is necessary to recognise the apparent over credentialism occurring in relation to jobs in low paying, insecure, low skill and non-career positions (ILO, 2015). Conversely, fully embracing the supply-side agenda will not necessarily improve the aggregate labour market challenges facing graduates.

In a politically sensitive context where graduates are facing large debts for tertiary education course fees (ABC, 2017) an element of blame-shifting as a government responsibility concerning the graduate employment problem.

In a politically sensitive context where graduates are facing large debts for tertiary education course fees (ABC, 2017), there is a noted rhetoric and blame shifting concerning the graduate employment problem . For example 'performance-based funding is intended to ensure universities focus sufficient attention on the quality of their teaching, and student support to ultimately achieve the best possible graduate outcomes' (Australian Education Department, 2019). Placing the onus on the education system, or

the absence of available jobs could be construed as governments evading responsibility. Governments are responsible for education funding, imposing fees on programs and the state of the labour market (Rothwell and Rothwell, 2017).

The issue of government "blame shifting" is neatly encapsulated in these two citations adeptly promoted by Rothwell and Rothwell (2017, p.44).

> As Orton (2011 , p. 353) noted, "- government no longer saw itself as responsible for job creation or protection, and what policy development there was focused overwhelmingly on the supply side."

> Similarly Chertkovskaya et al. (2013 , p. 701) suggested that: - individuals' capacity to – constantly work on their employability, has come to be understood as the crux of national, organizational and individual prosperity.

Rothwell and Rothwell (2017) argued that the neoliberal era from the 1970s onwards that has permeated western governments has resulted in a level of abrogation concerning governments' role in job creation through policies that stimulated jobs for graduates among other job seekers. With performance-based funding becoming an issue for universities in Australia (Australian Education Department, 2019) blame shifting is arguably extended to universities having an added responsibility of equipping students with skills and attributes that a labour market is unlikely to absorb given the numbers of students competing for jobs aligned to the field in which they have studied as emphasised in the next section.

The reality of the labour market has led to increases in the duration from graduation to regular employment, and more instances of the under-employment of

graduates (ILO, 2015; Dhakal et al., 2017). Typically, the transition from education to work involves short-term, low paid and contingent jobs that have no career development and minimum training (Burgess and Connell, 2015). As discussed in relation to protean careers, Baruch and Altman (2016) refer to the changing labour market ecosystem, stressing the importance of staying relevant to stakeholders by continuous investment in human and social capital throughout employees working lives.   In this context, governments are likely to place pressure on tertiary education providers, particularly through funding, to ensure that GWR competencies are built into degree programs. In this study the salient stakeholders identified those competencies they perceived as important for accessing employment, and subsequent analysis led to the systematisation of those competencies into a number of core areas it is recommended be addressed through program development. For example, the challenges concerning the development of soft/generic skills has resonance in the literature. In addition, the policy focus in Australia concerns a shifting funding focus for tertiary institutions towards graduate employment outcomes (Jackson, 2016). In this evolving policy context there is legitimate research and policy interest in identifying the perceived GWR competencies required. It is also acknowledged that possession of these "required" skills and competencies will not guarantee work, and that streamlining the supply side of the graduate job market will not generate more jobs (the demand side of the market).

It is also proposed that the issue of internships needs to be further explored. Tertiary education cannot adapt to the demands for hard technical skills in its curriculum at a pace and breadth that industry experiences due to the technological revolution. Hard technical skills need to be a key learning issue in a practical environment as well as soft skills. As such it is strongly recommended that more internships and work-integrated

learning are woven into the education experience so the blend of practice and theory with part-time study will ultimately be a routine experience for both students and employers.

In summary, this study and the approach to graduate work readiness in general has a number of limitations. First, it refers to graduates as a homogenous group,. Second, another limitation concerns the assignment of responsibility for addressing work readiness; here the emphasis is on tertiary institutions and employers. This can be challenged at three levels. The function of education and programs of study extend beyond accessing jobs and meeting employer expectations of graduates (Rothwell and Rothwell, 2017). At issue is the purpose of the university sector and to what extent considerations of work readiness should be accorded priority over the general functions of universities - such as critical analysis, the search for knowledge and independent scholarship. Second, the responsibility for full employment and the function of the labour market rests with Government, and the graduate employability discourse is limited to supply conditions in the labour market, excluding the demand side and its management (Rothwell and Rothwell, 2017). As such, it suggests that any employment problems, such as lack of jobs and underemployment, are the responsibility of higher education providers, rather than government. The third issue that emerges is linked to the politics of education, and whether the graduate work readiness agenda is a means towards program homogenisation, introducing national standards and more systems of testing and accreditation (Apple, 1993).

In relation to this agenda, the processes are associated with greater state control over the education system supported by funding rules linked to performance standards. As a result, data on the deteriorating state of the graduate labour market indicates that an integrated stakeholder approach is required to achieve improvements in graduate transitions from education to work. While this study has contributed to debates on the

topic, redefining graduate work readiness for the education sector requires further research to identify future labour market challenges in collaboration with graduates, educators, policymakers and employers (ManpowerGroup, 2016).

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