Does university prepare students for employment? Alignment between graduate attributes, accreditation requirements and industry employability criteria

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Abstract

One of the primary goals of tertiary education is to prepare students for employment. There is debate as to whether university courses adequately provide students with 21st century workplace skills (Kaminski, Switzer, & Gloeckner, 2009; Kivunja, 2014). In a rapidly changing workforce, institutions must constantly adapt to maintain the practical utility of their courses. A thematic analysis was conducted to explore the degree of alignment between graduate attributes, accreditation requirements and industry employability criteria in nursing, psychology and education courses at an Australian University. Graduate attributes were obtained from the Course Approval and Management System. Relevant accreditation requirements were sourced from the respective bodies. A search of advertised job positions for the three discipline fields was conducted from a popular job-search engine (SEEK) to ascertain employability criteria. This analysis identified clear alignment between the university's graduate attributes and the standards articulated by accreditation bodies for psychology, nursing and education. However, there were differences between graduate attributes and the employability criteria identified by job searches across the three disciplines. Analysis of the employability criteria suggest that employers seek and prioritise graduates who possess practical competencies and 21st century skills such as problem solving and communication. However, there was little to no mention of cultural understandings and attitudes towards inclusion and diversity, both a core graduate attribute and an aspect of professional accreditation. The findings of this study may inform the development of future graduate attributes that better reflect preparedness for the workforce. Alternatively, a reflection on graduate attributes and professional accreditation criteria might produce job advertisements that better reflect work contexts in an increasingly diverse society.

Keywords: employability, graduate attributes, accreditation, employment, psychology, nursing, education.

Introduction

Universities globally are progressively shifting their core business from knowledge transfer towards a more practical and employment-focused curricula that prepares students for professional careers and employment (Martin, Milne-Home, Barrett, Spalding, & Jones, 2000; Moore & Morton, 2015). University Graduate Attributes are designed to reflect student outcomes in regards to 21st century skills and capabilities keeping in mind the profession and the professional standards of the industry. Graduate attributes should reflect both the requirements of the accreditation standards and the industry needs. These attributes include both academic and generic skills required for participation/work in a particular profession. It is

clear that students need a variety of skills to be prepared for the unpredictable and ever changing nature of the workplace.

Gaps have been identified in Europe with graduates from 13 countries expressing dissatisfaction with their tertiary education training (Fernandez, Lopez-Miguens, & Lampon, 2014). More than 40,000 students from the United Kingdom, France, Italy and Spain are reported to lack the required job skills and the skills they have acquired at university are believed to be of limited practical workplace use (ANECA, 2007). Furthermore, Spanish employers stated that university training offered poor resemblance to industry requirements. The employers gave a rating of 5.5 out of 10 for the quality of university graduates' training when commencing work (Fernandez et al., 2014). Similarly, Jackson (2012) analysed the concerns of US, UK and Australian employers in relation to graduates' skill-gaps, reporting deficiencies within the graduates' skill-sets by identifying unmet industry requirements such as team working and communication.

Whilst curricula and graduate attributes are often developed with industry involvement that endeavours to address the gap between previous academic goals and industry needs (Gill, 2018), the research findings above suggest that the gaps still exist. The present investigation will focus on analysing the alignment between graduate attributes of three university courses, graduate attributes articulated by the accreditation bodies and the industry requirements reflected in online employment advertising. The underpinning orientation of this research is to determine whether the existing gaps are the result of the assignment of graduate attributes by universities and accrediting bodies that have goals different to those of employers.

Literature review

The Australian Federal Government announced the creation of the Tertiary Education Quality Standards Authority (TEQSA) in 2009 to audit tertiary education institutions against five sets of standards, including standards for graduate learning outcomes (Kelder & Jones, 2015). These general or threshold standards reflect minimal requirements and quality expectations for Australian tertiary education institutions (TEQSA, 2015). In addition to the national standards, universities formulate a series of graduate attributes for each of their courses. In addition to this, universities seek feedback about their courses, from industry advisory groups and accrediting bodies, through course monitoring and benchmarking, to ensure that essential knowledge is relevant and current and addresses changes in industry standards.

Australian universities have adopted a series of generic skills as a component of their graduate attributes. These are lists of 'attributes, or competencies' that graduates should acquire in completing their courses (Oliver, 2011; Jorre de St Jorre & Oliver, 2018). In a good practice report commissioned by the Learning and Teaching Council (Oliver, 2011) an examination of Australian university websites revealed consistency in the categorization of graduate attributes. The categories included: written and oral communication, critical and analytical thinking, problem-solving, information literacy, learning and working independently /collaboratively, ethical and inclusive engagement with communities, cultures and nations. Graduate attributes include both the knowledge (conceptual knowledge) and know-how (procedural knowledge) as they are deemed equally important in the process of learning (Hart, Bowden, & Watters, 1999). Employers value basic skills such as literacy and numeracy but also others such as teamwork, relationship building and problem solving. In addition, while academic writing skills are highly desired by university courses, some industry and employers indicated that academic writing skills do not appear to be a priority (Hart et al., 1999).

Accreditation of allied health courses is an essential requirement that ensures educational effectiveness, quality assurance and ongoing enhancement in tertiary education levels that is maintained through annual course monitoring (McAllister & Nagarajan, 2015). This process is a structured method for universities to demonstrate accountability for the quality of their

courses. This accountability extends to students, other universities, professional bodies, employer groups, the public and government by setting the minimal standards to uphold the integrity of the profession. Accreditation requires programs to demonstrate attainment of objectives related to the preparation of students for employment, and to include reasonable quality assurance standards in term of competencies (McAllister & Nagarajan, 2015). Traditional models of accreditation are compliance-driven and require documentation as evidence of the professional attributes of graduates. Accreditation bodies then audit universities collecting additional evidence and cross-reference data from multiple sources such as academics, students, clinical supervisors and employers (McAllister & Nagarajan, 2015).

Accreditation has often focused on educational inputs and resources, but in recent times there has been a shift in this focus with an increased emphasis being placed on student learning outcomes, attainment of competencies and 21st century skills (Camacho & Cayetano, 2012). This shift in emphasis is linked to changes such as enhanced curricular coherence (Health Workforce Australia, 2011), more efficient preparation of the health workforce, and enhanced public accountability for investments in health professional education (AHPRA, 2013; Health Workforce Australia, 2011). The graduate attributes created by universities and graduate attributes created by the accreditation bodies are most likely to align given the regulatory nature of the latter. However, the challenge is to identify the alignment between these two sets of attributes and the demands of the industry.

One of the important aspects of tertiary education is to endeavour to provide students with learning outcomes to gain access to a complex and global job market (Harrison & Grant, 2016). These learning outcomes should consider industry demands and standards to facilitate transition to employment. While accreditation standards are essential to accredited courses, other 'must-have' essential skills must also inform the structure of courses, learning and assessments methods in an ongoing communication between universities and industry groups (Camacho & Cayetano, 2012; Messum, Wilkes, Peters, & Jackson, 2016). Many terms are used to describe practical and 'work-ready' skills, including generic skills, essential skills, soft skills, key competencies, transferable skills, enterprise skills and 21st century skills. These skills and attributes are required to enable employees to effectively participate in the workforce (Cranmer, 2006; Messum et al., 2016). The frameworks that include these skills are also broader than just those relevant to employment and may include attributes that can be described as life skills or graduate attributes (Bridgstock, 2009).

Caballero, Walker and Fuller-Tyszkiewicz (2011,) defined work readiness as *the extent to which graduates are perceived to possess the attitudes and attributes that make them prepared or ready for success in the work environment* (p. 42). Yorke (2004) defined employability as a series of attributes that make graduates more likely to secure and maintain employment in their chosen occupations. Yorke (22004), and Shivoro, Shalyefu and Kadhila, (2018) further believe that these skills and attributes should be incorporated into the tertiary education curriculum. Fernandez, Lopez-Miguens and Lampon (2014) emphasised the importance of universities as links between the training received and the demands of the business world. Smith and Bath (2006) stated that these outcomes typically include a combination of qualities such as: critical thinking, intellectual curiosity, problem-solving, logical and independent thought, communication and information management skills, intellectual rigour, creativity and imagination, ethical practice, integrity and tolerance.

Desirable graduate attributes across the Australian university sector are predominantly consistent with accreditation requirements and industry needs (Hajkowicz et al., 2016). Although there is consistency in the desired graduate attributes across institutions, accreditation bodies and industry, the degree of alignment between the three sectors is pivotal for graduates to attain employment and warrants further investigation. Hart and colleagues (1999), stated that:

…only when there are explicit links between university – and professionally defined graduate competencies, students learning objectives, learning opportunities and assessment strategies will there be confidence in the quality of the programme as a preparation for professional practice (p. 307).

The present investigation aimed to ascertain the degree of alignment between the graduate attributes of courses at an Australian university, graduate attributes from accreditation bodies and the industry requirements reflected in online employment advertising. Job advertisements reflect the skills and personal attributes that are sought by employers and provide a platform for understanding employers' needs (Arcodia & Barker, 2008).Two questions underpinned this research:

1. Does university prepare students for employment?
2. Do graduate attributes, accreditation requirements and industry employability criteria align?

Methodology

Data collection

Graduate attributes were obtained from the Course Approval and Management System. Course learning outcomes were also available, but for the purpose of this paper were not included in the analysis. The following graduate attributes are common to all courses offered by the university in question:

1. Adaptable and capable 21st century citizens who can communicate effectively, work collaboratively, think critically and solve complex problems.

2. Confident, creative lifelong learners who can use their understanding of themselves and others to achieve their goals in work and learning.

3. Responsible and ethical citizens who use their intercultural understanding to contribute to their local and global communities.

Relevant accreditation requirements were sourced from the respective bodies. The Australian Psychology Accreditation Council is an independent quality and standards organisation, appointed as an external accreditation entity for the Psychology Profession in Australia (Burton, Westen, & Kowalski, 2015). Data was sourced from the *Rules for Accreditation and Accreditation Standards for Psychology Courses* (APAC, 2010). The Australian Nursing and Midwifery Accreditation Council (ANMAC) is the accrediting authority for nursing and midwifery programs of study (Ralph, Birks, & Chapman, 2015). Data was sourced from the *Registered Nurse Accreditation Standards* (ANMAC, 2012). Finally, the Australian Institute for Teaching and School Leadership (AITSL) is the organisation for maintaining the accreditation standards in relation to education (Temperley, 2011). Data was sourced from the *Guidelines for the accreditation of initial teacher education programs in Australia* (AITSL, 2016).

A search of advertised job positions for the three discipline fields was conducted using the popular job-search engine (SEEK) to ascertain employability criteria. SEEK is considered one of the most used job-search engines in Australia (Australian Business Report, 2017). The specific keyword and classification search criteria for each profession are provided below in Table 1. To remove any potential researcher bias, the first three jobs the SEEK search produced were selected, except when; advertisements provided too little information about the job to glean useful information; advertisements were for senior positions not suitable to entry-level university graduates; advertisements were for jobs that had very specific roles within one of the professions; or if the three selected advertisements were repetitious.

Table 1: SEEK (https://www.seek.com.au/) Job Search Criteria, Listings and Selections by Discipline.

	Psychology	**Nursing**	**Education**
Keyword Search	Psychologist	Nurse	Teacher
Classification	Healthcare and Medical, selected: Psychology, counselling and social work	Healthcare and Medical, selected: Nursing – A&E, critical care & ICU, Nursing – aged care, Nursing – community, maternal & child health, Nursing –general medical and surgical, Nursing – high acuity, nursing – midwifery, neo-natal, SCN & NICU, Nursing – Paediatric and PICU, Nursing – psych, forensic & correctional health & Nursing – theatre & recovery.	Education & Training, selected: Teaching – Primary (471 jobs) and Teaching – Secondary (808 jobs)
Where	Australia	Australia	Australia
Work Types	All work types	All work types	All work types
Income	None selected ($0-200k+)	None selected ($0-200k+)	None selected ($0-200k+)
Listed	Any Time	Any Time	Any Time
Jobs Found (As of 10th Oct, 2018)	594	4388	1279 (471 primary teacher & 808 secondary teacher)

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Study design and analysis

Analysis was conducted to explore the degree of alignment between graduate attributes, accreditation requirements and industry employability criteria in nursing, psychology and education courses. Thematic analysis techniques were deemed as the most appropriate in order to identify themes and patterns within the data from different sources (Braun & Clarke, 2006). Following a combined theoretical and inductive approach, the themes were identified and aligned from different data sources (Braun & Clarke, 2006). Document analyses yielded data—excerpts, quotations, or entire passages—that were then organised into major themes, categories, and case examples through content analysis (Bowen, 2009). A systematic review of the documents focussed on identifying the common themes between the sources of data aiming to align key words/concepts (Bowen, 2009; Braun & Clarke, 2006). Following Bowen's recommendation for qualitative research the researchers determined the authenticity and usefulness of the sources, taking into account the original purpose of each document, the context in which it was produced, and the intended audience.

Results

The tables below are designed to explore the alignment between graduate attributes, industry accreditation standards and online industry job advertisements across the three disciplines. Blank table cells indicate no alignment between one or more of the data sources.

A systematic content review indicated that the three course specific graduate attributes (CSGA) capture the six graduate attributes (GA) required for accreditation in the psychology course. The second part of this GA is well and clearly aligned to CSGA 1 (b). The GA3 refers to critical thinking and this is aligned with CSGA 1 (a). However, the second and third qualifiers for the GA appear vague and there is no clear alignment with the CSGAs. GAs four and five are also well aligned to CSGA3 and CSGA1(c) respectively. Finally, the alignment of GA 6 appears to be less defined as the language contained in the qualifiers is not always reflected within the CSGAs.

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Table 2: Comparison of Themes for ABPC - Bachelor of Psychology (Honours) Course.

Course Specific Graduate Attributes (CSGA)	The Australian Psychology Accreditation Council Graduate Attributes (GA)	SEEK Job Advertisement Requirements (S1, S2, S3)
CSGA1: a) Identifying, anticipating and solving problems ranging from simple to important, complex and unpredictable problems	GA4 Evaluate psychologists behaviour in psychological research and other professional contexts in relation to the Australian Psychological Society "Code of Ethics" and the complementary "Ethical Guidelines", as well as the Australian "National Practice Standards for the Mental Health Workforce"	S1 - A dedication to self-reflection and professional development. S2 - Exceptional clinical skills. S3 - Helping families and carers to identify causes of behaviour. S3 - Effective problem solving skills S3 - Identify and implement supports and strategies that make sense for the client and their individual environments. S3 - Working with clients and their supporters to reduce the impact of mental health concerns such as anxiety and depression by using individualised, systemic or group programs.
b) Accessing, evaluating and analysing information	GA2 Conduct basic studies to address psychological questions: frame research questions; undertake literature searches; critically analyse theoretical and empirical studies;	S3 - In depth knowledge and experience in implementing the service requirements for people with disabilities.
c) Effective communication using known and yet to be developed tools in many contexts	GA5 Communication skills write a standard research report using American Psychological Association (APA) structure and formatting conventions demonstrate effective oral communication skills in various formats (e.g., debate, group discussion, presentation) and for various purposes	S1 - Good communication and rapport building skills. S2 - Ability to foster positive relationships. S3 – Excellent written and verbal communication skills, including a demonstrated ability to communicate across all levels of the organisation, with clients and their families, and other external parties.

d) Using effective interpersonal skills, collaborate with and influence, their personal, work, and community networks locally and globally	GA5 Demonstrate effective oral communication skills in various formats (e.g., debate, group discussion, presentation) and for various purposes write a standard research report using American Psychological Association (APA) structure and formatting conventions	S1 - A willingness to work with a diverse client case load. S2 – ability to foster positive relationships across the entire organisation and especially with patients/clients. S2 – Leading by example.
CSGA 2: a) Understanding of the role of culture, values and dispositions in affecting achievement of goals	GA1 Social psychology History and philosophy of psychology Intercultural diversity and indigenous psychology	
b) Understanding how to initiate and develop new ideas	GA2 Design and conduct basic studies to address psychological questions: frame research questions;	S1 - A dedication to self-reflection and professional development. S2 - Identifying opportunities for continual improvement.
c) Planning and organising self and others	GA2 Research methods in psychology Formulate testable hypotheses; operationalise variables; choose an appropriate methodology;	S1 - An ability to work autonomously and to be reliable. S1 - The ability to self-manage case notes, letters to referrers and report writing in accordance with good practice procedures. S2 - Ability to work unsupervised.
d) Decision-making	GA2 design and conduct basic studies to address psychological questions: frame research questions; undertake literature searches; critically analyse theoretical and empirical studies; formulate testable hypotheses; operationalise variables; choose an appropriate methodology; make valid and reliable measurements; analyse data and interpret results; and write research reports	

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CSGA 3:	GA1	S1 - A willingness to work with a diverse client case load.
a) Respecting and valuing diversity	Social psychology History and philosophy of psychology Intercultural diversity and indigenous psychology	
b) Developing capacities required to contribute to a more equitable and sustainable world, including courage and resilience	GA6 Learning and the application of psychology	
c) Understanding the workings of local and global communities and individuals' responsibilities within these	GA3 Critical thinking skills Question claims that arise from myth, stereotype, pseudoscience or untested assumptions recognise and defend against the major fallacies of human thinking	
d) Understanding the intricacies of balancing individual and public good	GA4 Values, research and professional ethics evaluate psychologists" behaviour in psychological research and other professional contexts in relation to the Australian Psychological Society "Code of Ethics" and the complementary "Ethical Guidelines", as well as the Australian "National Practice Standards for the Mental Health Workforce" use information in an ethical manner (e.g., acknowledge and respect work and intellectual property rights of others through appropriate citations in oral and written communication)	

Table 3 demonstrates an alignment as Standard 1 contains requirements relating to the course provider and Standard 2 is captured in CSGA1. There is definitely alignment between standards 4 and 8 and the CSGAs. Standards 5, 7 and 9 refer to pre-admission requirements and resources for the course and quality improvement/risk management respectively. However, CSGA3 does not appear to be explicitly related to industry requirements for the Bachelor of Midwifery/Bachelor of Nursing. The Bachelor of Midwifery/Bachelor of Nursing graduate attributes, accreditation standards and industry requirements were substantially aligned in relation to practical skills. These skills included:

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problem solving, critical thinking, written and oral communication, working collaboratively and independently, leadership and decision making amongst others.

Table 3: Comparison of Themes for HBMA - Bachelor of Midwifery/Bachelor of Nursing.

Course Specific Graduate Attributes (CSGA)	ANMAC Standards (S)	SEEK Job Advertisement Requirements (S1, S2, S3)
CSGA 1: The units of study focus on students developing critical thinking and problem solving skills. Students are expected to access, evaluate, synthesise and analyse information to assist knowledge development and in completing assessment tasks.	S4: Program Content 4.2 The central focus of the program is nursing practice, comprising core health professional knowledge and skills and specific nursing practice knowledge and skills that are evidence based, applied across the human lifespan and incorporate national and regional health priorities, health research, health policy and reform.4.3 Nursing research and evidence-based inquiry underpins all elements of curriculum content and delivery. 4.4 Program content supports the development and application of knowledge and skills in: a. critical thinking, analysis and problem solving b. quality improvement methodologies c. research appreciation and translation d. legal and ethical issues in health care and research e. health informatics and health technology.	S1 - Outstanding clinical skills. S1 - Ability to deliver quality clinical assessments for residents through a comprehensive assessment process. S1 - Managing medication in accordance with resident needs and legislative requirements. S2 - Good critical thinking attributes. S2 - Good Judgement and Decision making attributes.
Students work to develop theoretical knowledge applied to clinical practice in all units of study.	S2: Curriculum Conceptual Framework 2.1 A clearly documented and explained conceptual framework for the program, including the educational	S1 - Knowledge of Aged Care Legislation, Accreditation, and ACFI.

	and professional nursing philosophies underpinning its curriculum. 2.2 The incorporation of contemporary Australian and international best practice teaching, learning and assessment methodologies and technologies to enhance the delivery of curriculum content, stimulate student engagement and promote understanding. 2.3 A program of study that is congruent with contemporary and evidence-based approaches to professional nursing practice and education.	S1 - Understanding of WHS responsibilities, including manual handling principles. S2 - Knowledge of Accreditation processes.
Effective communication and interpersonal skills are required in developing their role to become graduate health professionals through presenting material and meeting competencies commensurate with being a 21st century citizen.	S2: Curriculum Conceptual Framework 2.4 Teaching and learning approaches that: i. promote emotional intelligence, communication, collaboration, cultural safety, ethical practice and leadership skills expected of registered nurses j. incorporate an understanding of, and engagement with, intraprofessional and interprofessional learning for collaborative practice.	S1 - Excellent verbal and written communication skills. S1 - Outstanding people skills with ability to build rapport with residents and families. S1 - Leading and supporting care staff in the delivery of person-centered care. S2 - Be a team player. S2 - Great communication skills. S3 - Excellent communication and interpersonal skills.
CSGA 2: Students will develop an understanding of themselves relating to others using a cultural-awareness approach throughout their course	S4: Program Content 4.5 Inclusion of subject matter that gives students an appreciation of the diversity of Australian culture, develops their knowledge of cultural respect and safety, and engenders the appropriate skills and attitudes	S2 - Motivation and Enthusiasm for learning.
Major pieces of assessment require students to embrace diversity in the context of Australian health care and associated systems using an individualised-approach to	S4: Program Content 4.6 Inclusion of a discrete subject specifically addressing Aboriginal and Torres Strait Islander peoples' history, health, wellness and culture. Health conditions prevalent among Aboriginal and Torres Strait Islander peoples are also appropriately embedded into other subjects within the curriculum.	

interacting effectively and meaningfully with people.		
Collaborative learning and assessment requires students to organise themselves and others.	S3: Program Development and Structure 3.1 Consultative and collaborative approaches to curriculum design and program organisation between academic staff, those working in health disciplines, students, consumers and other key stakeholders including Aboriginal and Torres Strait Islander health professionals.	S1 - Demonstrated ability to operate independently and professionally. S1 - Ability to delegate duties. S1 - Demonstrated leadership skills. S3 - Ability to prioritise your workload and confidence in working autonomously
CSGA 3: The Bachelor of Midwifery/Bachelor of Nursing dual degree provides students with the opportunity to develop their intercultural understanding by respecting and valuing diversity amongst peers, other health professionals and most significantly, the women and clients, midwives and nurses care for.	S8: Management of Workplace Experience Each student is provided with a variety of workplace experiences reflecting the major health priorities and broad landscape of nursing practice. Opportunities are provided for intraprofessional and interprofessional learning and the development of knowledge, skills and behaviours for collaborative practice.	
Students develop capacities to understand the broad concepts of health when applied to their local community, health agencies and broader Australian society, with links to the international community. Such an approach provides opportunities to contribute to a more equitable and sustainable world.	S4: Program Content 4.2 The central focus of the program is nursing practice, comprising core health professional knowledge and skills and specific nursing practice knowledge and skills that are evidence based, applied across the human lifespan and incorporate national and regional health priorities, health research, health policy and reform. 4.3 Nursing research and evidence-based inquiry underpins all elements of curriculum content and delivery.	

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	4.4 Program content supports the development and application of knowledge and skills in: a. critical thinking, analysis and problem solving b. quality improvement methodologies c. research appreciation and translation d. legal and ethical issues in health care and research e. health informatics and health technology.	

Table 4 shows results for education. There was a substantial level of alignment between CSGA1 and CSGA2 and the content of advertisements when compared to CSGA3, which appears poorly aligned (see table 4). The industry requires the applicants to be caring, considerate, and compassionate with a commitment to equal opportunity and work safety, indicating alignment to CSGA3 and standard 4 (table 4). There are elements of CSGA3 relating to multiculturalism, inclusion and diversity that are not explicitly mentioned in the job advertisements

Table 4: Comparison of Themes for EBED - Bachelor of Education (P-12) Course.

Course Specific Graduate Attributes (CSGA)	AITSL Standards (S)	SEEK Job Advertisement Requirements (S1, S2, S3)
CSGA 1: students work collaboratively in teams and engage with academics, peers and school colleagues to interpret curriculum and explore school students' knowledge, interests and lives, to plan learning experiences for learners in a range of contexts and settings and from diverse backgrounds facing uncertain futures.	Standard 2 – Know the content and how to teach it 2.1 Content and teaching strategies of the teaching area Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area. 2.2 Content selection and organisation Organise content into an effective learning and teaching sequence.	S1 - Able to engage students through stimulating lesson delivery. S1 - Capable of building a positive rapport with students, staff and parents. S1 - Willing to develop and participate in the College's co-curricular program. S3 - Have the desire and skills to participate in the school's pastoral care program. S3 - Have the desire and skills to participate in the College's co-curricular program.

Students develop a critical understanding of the changing nature of society (technological, economic, environmental and cultural) and its implications for education, with particular emphasis on the developments associated with the global knowledge economy and society	Standard 4 – Create and maintain supportive and safe learning environments 4.5 Use ICT safely, responsibly and ethically Demonstrate an understanding of the relevant issues and the strategies available to support the safe, responsible and ethical use of ICT in learning and teaching	S1 - Open to new ideas, innovations and use of emerging technologies.
As a result they develop personal and social attributes needed to communicate in a variety of contexts and modes.	Standard 3 – Plan for and implement effective teaching and learning 3.6 Evaluate and improve teaching programs Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning.	S1 - Capable of building a positive rapport with students, staff and parents. S2 - Excellent interpersonal and communication skills. S2 - Proven ability to build and maintain positive relationships. S3 - Ability to communicate effectively with a wide range of people both verbally and in writing.
CSGA 2: Be active and reflective practitioners, equipped with the critical awareness, teaching competence, knowledge and attitudes to teach young people in schools in the twenty-first century.	Standard 2 – Know the content and how to teach it 2.1 Content and teaching strategies of the teaching area Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.	S1 - Able to use feedback and reflection to improve their practise. S3 - Be passionate about understanding how learning occurs and teaching pedagogies suitable for junior secondary aged students. S3 - Be able to respond positively to the pressures of a modern classroom. S3 - Be able to set high standards for student learning and their own performance.
Students develop curriculum, organise classrooms and use teaching strategies across all learning areas including literacy, numeracy and the application of Information Communication Technology (ICT), which include all	2.5 Literacy and numeracy strategies Know and understand literacy and numeracy teaching strategies and their application in teaching areas. 2.6 Information and Communication Technology (ICT)	S1 - Willing to develop and participate in the College's co-curricular program. S1 - Able to engage students through stimulating lesson delivery. S2 - Effective planning and organisational skills. S2 - Strong curriculum knowledge would be highly regarded.

school students in learning. In addition students work both autonomously and collaboratively to develop an understanding of what it means to be a learner in a changing world	Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.	S2 - Proven competence with the use of technology in a learning environment.
Develop an understanding of the complex relationships between learning identities (gendered, social, cultural, ethnic and linguistic), disability, values, attitudes, behaviours and schooling success. These experiences continue to build students' capacity for lifelong learning, problem solving and goal achievement.	Standard 1 – Know students and how they learn 1.3 Students with diverse linguistic, cultural, religious and socioeconomic backgrounds Demonstrate knowledge of teaching strategies that are responsive to the learning strengths and needs of students from diverse linguistic, cultural, religious and socioeconomic backgrounds 1.4 Strategies for teaching Aboriginal and Torres Strait Islander students Demonstrate broad knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students from Aboriginal and Torres Strait Islander backgrounds.	S1 - Able to engage students through stimulating lesson delivery. S1 - Keen to reach every student through use of effective differentiation and care. S3 - Be able to respond positively to the pressures of a modern classroom.
CSGA 3: Develop democratic and inclusive teaching and learning practices that value intercultural understanding and difference.	Standard 4 – Create and maintain supportive and safe learning environments 4.1 Support student participation Identify strategies to support inclusive student participation and engagement in classroom activities.	S1 - Keen to reach every student through use of effective differentiation and care. S1 - Committed to managing the class with consideration and compassion. S3 - Knowledge of and a commitment to the principles of equal opportunity and work safety.
Develop knowledge of Indigenous communities and develop resources to teach Indigenous students. In addition they develop teaching and learning portfolios that examine ethical and	Standard 2 – Know the content and how to teach it 2.4 Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between Indigenous and non-Indigenous Australians	

professional codes of conduct when working with school communities.	Demonstrate broad knowledge of, understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages	
Develop the capacity to understand local and global education issues through unit content and practicum experience and work towards to a more equitable and sustainable world through research and knowledge exchange. During their time in educational settings students work with diverse learners and are aware of the need to be respectful of cultural, linguistic and religious diversity. Exposure to different teaching situations allows students to be aware of different classroom climates, alternative teaching styles and curriculum design that leads to a building of cross-cultural knowledge	Standard 6 – Engage in professional learning 6.2 Engage in professional learning and improve practice Understand the relevant and appropriate sources of professional learning for teachers. 6.3 Engage with colleagues and improve practice Seek and apply constructive feedback from supervisors and teachers to improve teaching practices. 6.4 Apply professional learning and improve student learning Demonstrate an understanding of the rationale for continued professional learning and the implications for improved student learning.	

Discussion

The present investigation explored alignment between the course specific graduate attributes of an Australian university, the graduate attributes required by accreditation bodies in three disciplines and the industry requirements reflected in online employment advertising for those disciplines.

The key and novel findings of the present investigation were:

1. Greater alignment between university graduate attributes and accreditation requirements in comparison to industry employability criteria from job advertisements.

2. Employers sought and prioritised graduates who possess practical competencies and 21st century skills such as problem solving and communication, with little to no mention of cultural understandings and attitudes towards inclusion and diversity.

In order to ascertain whether universities prepare students for the workforce it is necessary to discuss the degree of alignment between what universities offer and what is required to obtain employment (Camacho & Cayetano, 2012; Fernandez, Lopez-Miguens, & Lampon, 2014; Harrison & Grant, 2016, Messum et al., 2016). Results indicated that there is substantial alignment which would satisfy the traditional employability definitions (Caballero et al., 2011; Gill, 2018). The results coincide with Bath, Smith, Stein and Swann, (2004) as the alignment was present in relation to critical and logical thinking, intellectual curiosity, problem solving, communication and creativity skills, ethical practice, integrity and tolerance. This alignment also concurs with other studies (Oliver, 2011; Oliver, 2015; Jorre de St Jorre, & Oliver, 2018) in regards to the previously mentioned skills. However, there is limited alignment in relation to inclusive engagement with communities, cultures and nations (Oliver, 2015).

Universities have included cultural understanding and inclusion and diversity in their graduate and course specific attributes as demonstrated in the tables above. Industry values these attributes as they have strategic policies regarding culture, inclusion and diversity but they are not always able to demonstrate how these policies would work on the ground (Pless & Maak, 2004). This may explain why specific reference to these attributes is missing in the job advertisements. In relation to the psychology course, the first identifiable misalignment refers to understanding the role of culture, values and dispositions (see Table 2). Universities and accreditation bodies place high importance on cultural, social and environmental issues (Oliver 2015), whilst industry does not according to the online employability criteria analysed in this study. Course accreditation processes appear to be more stringent when cross-referencing current university standards and less successful at auditing rapidly evolving industry needs and subsequently relaying these to the university sector to ensure graduates are employable in the 21st century (McAllister & Nagarjan, 2015). Accrediting bodies and universities must acknowledge that technological advances and data analytics are impacting and shaping the jobs of the future and orient graduate attributes accordingly (e.g. develop technological literacies).The new version of the Australian Psychology Accreditation Council Standards effective from 01/01/2019 appear to be written from a more pragmatic perspective instead of a philosophical or academic approach. The focus of the new standards appears to be around the practice placements in what represents a shift towards a closer connection to the practice of professional psychology in the workforce. Indeed, some of the previous language appears to be vague, including words such myths, pseudoscience and fallacies of human kind. The results from the present investigation concur with those of Arcodia and Barker (2008) and Bath, Smith, Stein and Swann, (2004), who identified key skills sought by employers of nurses and allied health workers such as: organisation, people and problem

solving skills. These results differ from Oliver (2015) as the industry requirements for nursing do not include diversity and cultural demands for graduates. The majority of Australian universities listed culture awareness and diversity within their graduate attributes (Oliver, 2015). This was the case for this university and the nursing accreditation body (ANMAC) in the current study. Similarly to the psychology course, cultural awareness does not appear to be explicitly related to industry requirements. In addition, the graduate attributes had a significant focus in making a contribution to a more equitable and sustainable world. This focus was not present in the industry job requirements.

The industry requirements articulated in job advertisements appear to focus on knowledge and content for all three disciplines. Like both the psychology and midwife/nursing courses, the industry requirements for education appeared to be focused around knowledge and content reflected in skill sets (Hart et al., 1999). Employers desired candidates with excellent communication, planning and organisational skills. These skills and attributes are consistent with previous literature (Cranmer, 2006; Messum et al., 2016) outlining industry demands for employees to be effective in the workforce. Educational institutions also sought graduates who were passionate, compassionate, engaging, adaptive and reflective. The aforementioned personal attributes were only partially mentioned within the graduate attributes and accreditation standards for education (AITSL). In contrast, both attributes and standards described in detail cultural awareness, values, beliefs and diversity yet were not explicitly stated within job advertisements.

The divergent levels of alignment between pragmatic knowledge and ethical themes may be due to the former relating to industry related skills and competencies as opposed to the latter which refer to attitudes, values and beliefs that are rarely mentioned within job advertisements, but may be a part of broader workplace culture documents. In the 21st century there is a possibility that employers within a market-driven environment prioritise employees who possess productivity-related attributes above ethical and cultural awareness, because of a lack of recognition of the relationship between workplace culture and productivity. Another possible rationale for why industry employment criteria did not align with graduate attributes or accreditation standards when referring to cultural beliefs, values and dispositions may be that employers implicitly or inherently expect potential job candidates to possess certain values and attributes as university trained professionals, and thereby do not list them within online advertisements.

Industry needs to clearly articulate their requirements to enable universities to design their curricula and convey these expectations explicitly to students in an attempt to address the skills gaps (Jackson, 2009). In order for this to occur it would require clearer communication between industry and Universities to address the attributes that are key to the specific industry. It is evident that the Universities curricula does address the industry knowledge and skill requirements in most cases, but what is missing is the explicit reference to the attributes of cultural awareness, values, beliefs and diversity. Industry has policies to suggest these are important and so must ensure that these attributes are communicated to Universities and students alike.

Universities have CSGA and GA as they are not only developing industry ready graduates but also graduates who are completing courses that are not industry specific. Universities are a place of learning about content knowledge, and the process of learning itself and would be compromised if they only developed key competencies for industry specific means. Each University has an obligation to the students they teach to develop attributes that would serve them in this current climate.

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Strengths and limitations

Conducting a systematic thematic analysis by collating and comparing data from three different sources (university, accreditation bodies and industry advertisements) identified clear patterns between the sources (i.e. alignment or misalignment). Consistent findings across multiple disciplines validates the stringent methodology of this study.

A small sample of advertisements were utilised from one recruitment platform (SEEK) which is a limitation of this study that may have biased the findings. This research present an early understanding of the alignment between universities accrediting bodies and industry requirements. While this study did not explore the course learning outcomes or individual unit learning outcomes which may have provided further insight into the degree of alignment between the three sectors it has provided an insight into the differences between three sources.

Practical applications and future directions

The findings of this study may inform the development of future graduate attributes that better reflect preparedness for the workforce.

Further research will benefit from interviewing industry leaders in order to obtain a richer understanding of their expectations in relation to prospective employees. Given the findings of the present study, further investigation of the degree of alignment between the three sectors and other discipline courses is warranted. In addition, the alignment between course learning outcomes and Australian government guidelines such Job Outlook (https://joboutlook.gov.au/) should also be considered and explored.

Conclusion

Thematic analysis identified clear alignment between an Australian university's graduate attributes and the accreditation bodies standards for psychology, nursing and education. This may come as no surprise as these standards drive course design, course content and further the development of graduate attributes within each course. The differences in specific criteria and language may be explained by an understanding of graduate attributes as wider reaching statements that include an alignment with the values of the universities and the cohorts they serve. Job searches across the three disciplines indicated that employers are seeking and prioritising graduates who possess practical competencies and 21st century skills such as problem solving and communication with little mention of cultural understandings and attitudes. The findings of this study may inform the development of future graduate attributes that better reflect preparedness for the workforce. Alternatively, they may inform workplaces about the increasing need for entry-level positions to require an understanding of, and capacity to work within, an increasingly diverse society

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