Leadership education: a content analysis of postgraduate leadership education programs for health and human service leaders in Australian universities

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Abstract

Purpose – A systematic investigation of postgraduate leadership programs for health and/or human services offered by Australian higher education institutions was undertaken.

Design/methodology/approach – Quantitative analysis identified the core characteristics of the programs. A thematic analysis of the course learning outcomes was conducted and six major themes of disciplinary leadership and management knowledge; research and analytical skills; professional practice; communication and collaboration; creativity and innovation; and system knowledge are shared in this study.

Findings – The authors conclude that Australian universities have taken an evidence-based approach to leadership education.

Originality/value – More work might need to be undertaken to ensure leadership theories are incorporated into learning outcomes.

Keywords Leadership education, Leadership development, Post-graduate programs, Health and human services

Paper type Research paper

Introduction

Effective and efficient leadership is essential for the delivery of high standards of health and human service (H&HS) sector practice (Curtis, Sheerin, & de Vries, 2011; Flaig, Alam, Huynh, Reid-Hector, & Heuer, 2020; van Diggele, Burgess, Roberts, & Mellis, 2020) and is crucial to the success of H&HS organisations as they face the threats and challenges posed in the modern world (Citaku *et al.*, 2012; Flaig *et al.*, 2020). H&HS practitioners may have professional and/or clinical expertise but are often not skilled or experienced in leadership and management before being offered a leadership role (Figueroa, Harrison, Chauhan, & Meyer, 2019; Kwamie, Dijk, & Agyepong, 2014).

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Leadership postgraduate education is of importance for enhanced capability (Middleton, Jones, & Martin, 2020); for encouraging transformational change (Sethi, Schofield, McAleer, & Ajjawi, 2018); and for addressing complex challenges and "wicked" problems (Burns, 2016; Onyura *et al.*, 2019). Leadership education has been studied extensively within the medical profession (Blumenthal, Bernard, Bohnen, & Bohmer, 2012; Busari, 2013; Frich, Brewster, Cherlin, & Bradley, 2015; Geerts, Goodall, & Agius, 2020; Hartzell, Yu, Cohee, Nelson, & Wilson, 2017; Sultan *et al.*, 2019; White, Bledsoe, Hendricks, & Arroliga, 2019) and the nursing profession (Curtis *et al.*, 2011; Hendricks, Cope, & Harris, 2010) but there is a significant gap regarding postgraduate leadership education for the broader H&HS sector.

Leadership consists of learnable skills and practices that can be developed. There is growing recognition that formal education is cornerstone for leadership development in the H&HS sector (Blumenthal *et al.*, 2012; Hart, 2016; Sonnino, 2013, 2016; van Diggele *et al.*, 2020). Higher education institutions play a unique role in developing leadership capacity (Kakim & Priest, 2020). Much of the research focuses on the development of the individual practitioner and there is recognition that more research is required at an organisational and policy level to address the gaps in leadership development and capacity across the H&HS sector (Aged Care Workforce Strategy, 2018; Blumenthal *et al.*, 2012; Joubert, Boyce, McKinnon, Posenelli, & McKeever, 2016; Miles & Scott, 2019).

Whilst the literature identifies the potential benefits of leadership education the question of what is taught and what should be covered in postgraduate programs is not easily answered (Curtis *et al.*, 2011; Flaig *et al.*, 2020). Empirical work to understand the most valuable components has been lacking (Curry, Ayedun, Cherlin, Allen, & Linnander, 2020) although the International Leadership Association does provide guiding questions that can be used to assess leadership programs (International Leadership Association, 2009). This analysis aims to identify the similarities and differences between postgraduate H&HS leadership programs conducted in Australian Universities through data captured from institutional websites. This will enable the researcher to better understand how leadership is taught and learnt in order to inform future curriculum development for postgraduate leadership education specific to the needs of the H&HS workforce.

The purpose of this study was to conduct a systematic investigation of postgraduate leadership programs for health and/or human services offered by Australian higher education institutions in order to identify and describe their characteristics.

Terminology

For the purpose of this study the following definitions provide clarity around the terminology used.

(1) Program: A structured academic program leading to the conferral of an award such as a Graduate Certificate, Graduate Diploma or Master's degree. The curriculum of study in which a student is enrolled, defined by level of study, volume, type of learning and course learning outcomes (CLOs). Sometimes referred to as a course in some universities.

(2) Unit: A component of study of an academic course/program assigned a unit value. A unit of study is defined by level, volume, type of learning and unit learning outcomes, which can be offered in terms, locations and programs; a component of a course/program. A group of units make up a course/program. Sometimes referred to as a subject or course in some universities.

(3) Outcome: A learning outcome is a statement of what the learner is expected to achieve and how the student can demonstrate that achievement.

Research question

The following question guided this analysis: What are the defining characteristics of postgraduate H&HS leadership programs conducted in Australian universities as identified from their website content?

Sub-questions

Sub-questions are as follows:

(1) What do the CLOs tell us about the expected capabilities that students should acquire by completing study in postgraduate H&HS leadership programs conducted in Australian universities as identified from their website content?

(2) What are the topics covered in the coursework core units of postgraduate H&HS leadership programs conducted in Australian universities as identified from their website content?

Method

Sampling

A list of all Australian universities was compiled. The primary researcher (KF) examined the website of each university, and a search was conducted of publicly available extant data to identify postgraduate programs with any combination of the following key words; "postgraduate" AND "health" and/or "human services" AND "leadership", 'administration" or "management" in the title.

Data collection

A data abstraction form was developed by the researchers based on publicly available information. Program information, as per the data abstraction form, was downloaded from each of the Australian university websites in December 2020 using information from their 2021 handbook. The data abstraction form consisted of the following variables; university, program/course name, is this a nested program, faculty responsible for the program offered, entry requirements, credit point equivalents, Full time equivalent (FTE) duration, course structure, core units as a percentage of credit points, list of unit names of core units, program/CLOs, mode of delivery, indicative cost for a domestic student, any text targeting particular students and whether the program was accredited. Data was collated in an Excel spreadsheet with a total 15 data items recorded for each eligible program.

Program/course learning outcomes were collated in a Word document and then de-identified. Universities that did not have the CLOs on their website and did not provide a copy when requested by the researcher via email were excluded.

Unit names of coursework core units were collated in a Word document.

Data analysis

Both qualitative and quantitative approaches were used in the analysis of the data. Quantitative and qualitative research is complementary methods that work well together to provide broad insights into the phenomena under investigation. The use of multiple methods can overcome the biases and deficiencies that may result from the use of a single method including providing more comprehensive data, increased validity and enhanced understanding of studied phenomena (Bekhet & Zauszniewski, 2012; Palys & Atchison, 2014).

Quantitative analysis

Analysis of quantitative data was conducted in Stata v17.0 (Stata Corp LLC, 2021) by two researchers (KF and NS). Simple descriptive statistics were used, with χ^2 and Fisher's exact tests conducted where appropriate to examine course and program cost and accreditation status, and faculty type and accreditation status.

The Australian Bureau of Statistics' Australian Statistical Geography Standard (ASGS) – Remoteness Area framework (Australian Bureau of Statistics, 2021) was applied to each university to enable a comparison of the length of program and the accreditation status of courses by geographic location of universities. The ASGS is a classification of Australia into a hierarchy of statistical areas developed to reflect the location of people and communities and is updated every 5 years to account for growth and change in Australia's population, economy and infrastructure (Australian Bureau of Statistics, 2021). The ASGS divides Australia into five classes of remoteness, and this is based on a measure of relative access to services. The following classes have been created: major cities of Australia, inner regional Australia, outer regional Australia, remote Australia and very remote Australia.

Content analysis

Examination of the de-identified CLOs for 37 courses was undertaken by three researchers (KF, AH, RH) with differing professional backgrounds using a content analysis approach (Hackstadt, 2020; Hsieh & Shannon, 2005). Content analysis is an established methodology for analysing meaning and structure in text which can be in printed or electronic form (Bengtsson, 2016; Bowen, 2009; Erlingsson & Brysiewicz, 2017; Kleinheksel, Rockich-Winston, Tawfik, & Wyatt, 2020; Klenke, 2016; Prior, 2014; White & Marsh, 2006). Trustworthiness was achieved through investigator triangulation involving the use of multiple researchers in this study to provide multiple observations with the aim to improve credibility and mitigate bias (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Fusch, Fusch, & Ness, 2018). The diverse backgrounds of the researchers encouraged a plurality of perspectives being considered at each phase of the analysis (Archibald, 2016) and ultimately the combination of perspectives increased the comprehensiveness of the analysis and enabled verification of findings (Burla *et al.*, 2008; Denzin, 2012; Elo *et al.*, 2014). The emerging themes were finalised by two researchers (KF and PVD).

All CLOs were repeatedly read so the researchers became familiar with the depth and breadth of content. Working systematically through the data, key words were identified and, with the use of highlighters, initial codes were ascertained. The researchers met together to compare their individual analyses, condense and summarise the sub-themes and generate the final themes which were agreed upon by all investigators. Inter-coder agreement increased the consistency and transparency of the coding process and helped to provide confidence in the data (O'Connor & Joffe, 2020). The analysis initially identified 45 sub-themes which were then grouped by commonalities whereby six broad themes/categories were derived.

All unit names of coursework core units were analysed, and the researcher (KF) identified the core subject areas from the title in order to identify what were the most frequently occurring subject descriptors of postgraduate leadership programs for health and/or human services offered by Australian higher education institutions. This analysis was reviewed and scrutinised by all team members to check accuracy and establish dependability.

Findings

Australia is home to 43 universities (40 Australian universities, two international universities and one private speciality university) with at least one university main campus based in each state or territory. Thirty-one universities (72%) offer postgraduate qualifications in

leadership and/or management relevant to the health and/or human service sector with some offering multiple programs of study. The postgraduate qualifications included Graduate Certificate, Graduate Diploma and Master's degrees. A total of 41 masters level programs were identified across 26 universities and are the focus of this study. Twelve universities did not offer postgraduate programs in the H&HS sector and five universities offered a graduate certificate only.

Universities located in an urban area accounted for 30 out of 41 programs (73%) and 11 out of 41 (27%) were located in inner regional areas.

The majority (68%) of programs were situated within a health faculty regardless of whether they were urban or regional universities, 27% of programs were situated within a business faculty and 5% of programs were situated in a human services faculty (see Table 1). The majority of programs ($n = 38$, 93%) were either offered fully online or with a choice of online or face to face (see Table 1).

The program duration ranged from one to two years FTE. There were 21 (51%) programs with 1.5 years duration, 16 (39%) with two years duration, three (7%) with one year and one program with 1.7 years duration. There was no difference in length of program by urban or regional geographical location ($p = 0.52$). Most urban programs were either 1.5 ($n = 13$) or two years ($n = 13$) FTE duration with three programs offered over one year and one program offered over 1.7 years. Regional programs were predominantly of 1.5 years FTE duration ($n = 8$) with only three programs of two years duration.

The number of units of study per program ranged from eight to sixteen (median = 13). The majority of programs contained 12 units of study with the spread of units against program duration summarised in Table 2. The definition and calculation of credit points varied considerably between universities, credit point values for course completion varied from 16–400, and it was not possible to make any comparisons.

Core units as a percentage of total units ranged from 25% to 100% (median = 81%) for urban universities with one program offering 25%, 6 programs offering 50%, 6 programs offering 66% and two programs offering 100%. The spread was not so pronounced for regional universities with core units as a percentage of total units ranging from 50% to 92% (median = 66%). Two programs offering 50%, three programs offering 66% and two programs offering 92%.

	Faculty type			Modality			
Location	Health	Business	Human services	Fully online	Online or face to face	Online with intensives	Face to face
Urban	20	9	1	9	18	2	1
Regional	8	2	1	10	1	0	0
Total	28	11	2	19	19	2	1

Source(s): Table by authors

Table 1. Faculty type and modality by location

	Number of units						
Program duration	8	11	12	13	14	15	16
1 year	3						
1.5 years			20		1		
1.7 years			1				
2 years		1	3	1		2	9

Source(s): Table by authors

Table 2. Number of units by program duration

Indicative program costs ranged from $20,616 to $68,800 with programs evenly spread across the range. There was also a wide distribution in the cost of each unit of study ranging from $1,770 to $4,578 with a mean of $2,968 and a median of $2,850. Unit cost below or equal to the median accounted for 46% of programs whilst 54% were above the median. There was no difference in cost by faculty type (health, business, human services) ($p = 0.83$).

The majority of programs ($n = 27$, 66%) in Australia are not accredited with any nationally recognised accreditation program. Seven programs have received accreditation from the Australasian College of Health Service Management (ACHSM), two programs are Royal Australasian College of Medical Administrators (RACMA) accredited and five are both ACHSM and RACMA accredited. Accredited courses are predominantly in health faculties ($n = 10$), with no accredited courses in the human services faculties. Program cost was not associated with accreditation with no difference in accreditation status between courses costing below the median compared to courses costing above the median ($p = 0.75$). There was also no difference in accreditation status by geographical location (urban, regional) ($p = 0.82$) or by faculty type (health, business, human services) ($p = 0.82$).

Three universities offered double degrees, two in a business faculty, one in health; one has 15 units, one = 13 and one = 12; two = 2-year duration, one = 1.7 years duration. Double degrees were not the most expensive (range $37,071 to $47,520).

Six themes emerged during the content analysis of the CLOs. Thematic mapping is a visualisation technique that allows the researchers to summarise the themes and sub-themes from the analysis and illustrate the relationship between each (see Figure 1). The method assists in identifying and interpreting major patterns in the data (Ding & Meng, 2014). Prevalent themes include disciplinary leadership and management knowledge; research and analytical skills; professional practice; communication and collaboration; creativity and innovation and system knowledge.

Disciplinary leadership and management knowledge

This theme was mostly associated with the demonstrated mastery of theoretical knowledge and the application of specialised knowledge including the ability to critically appraise the interface between theory and practice. Having in-depth knowledge of their specialist discipline and skills in examining issues with multiple disciplinary perspectives is pivotal for success as a leader in the H&HS sector.

Illustrative examples from the CLOs relevant to this theme are shown below:

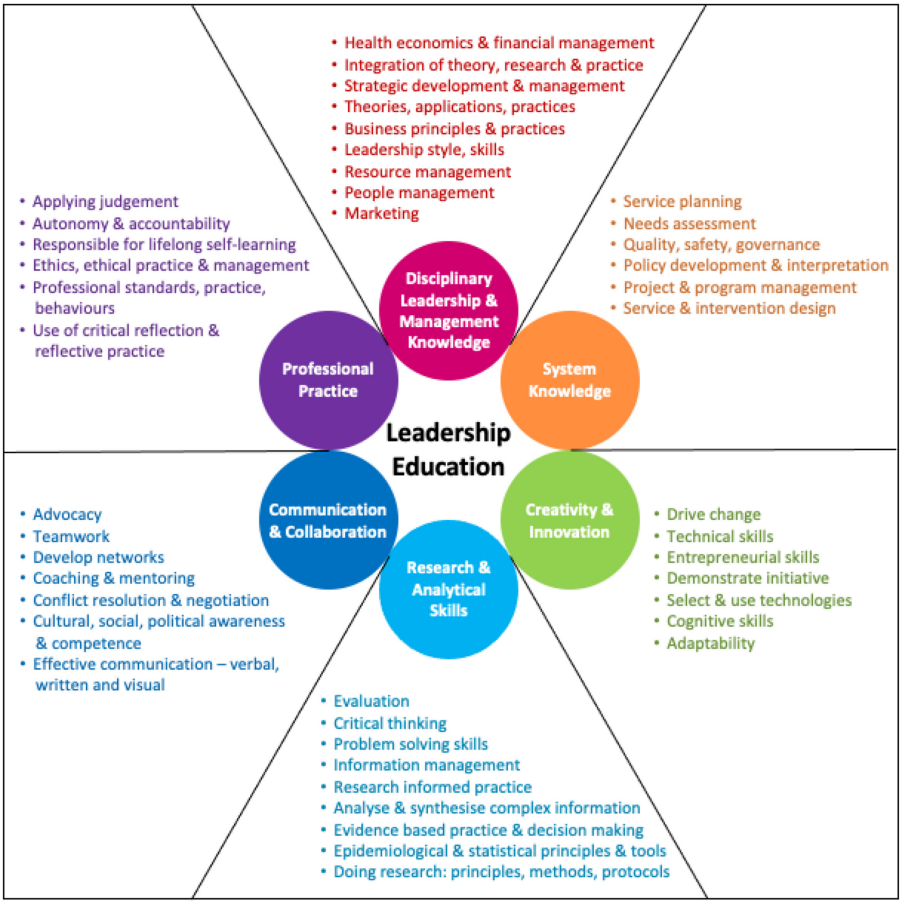
(1) *Advanced knowledge of the critical nature of health system leadership and management, health policy and planning as well as reform and strategic positioning for health care* (Higher Education Institution [HEI] 12).

(2) *Integrate a range of complex concepts of leadership and core management disciplines so as to influence internal and external stakeholders* (HEI 36).

System knowledge

This theme identified the need for leaders to understand the complexity of the system in which the services are delivered, including the political, social and cultural environment and how to balance the interrelationships and priorities. Applying this understanding involves assessment, planning, implementation and evaluation across multiple system components including quality, safety, policy, governance, strategic and workforce development. Knowledge of the health system has been identified as a gap in previous studies (Blumenthal *et al.*, 2012).

Examples from the CLOs relative to this theme include:



Source(s): Figure courtesy of Clare Raffety

Figure 1.
Thematic map of CLO themes

(1) *Evaluate and synthesise the impact of health system and health organisation resource allocation decisions and apply to future resource allocation decisions* (HEI 14).

(2) *Integrate and apply specialist knowledge and contemporary developments in management, quality, safety and leadership to a range of problems and scenarios in broad health care contexts* (HEI 19).

(3) *Appraise health service needs and apply evidence informed approaches for determining productive strategies, policies and management of resources drawing on contemporary disciplinary domains, theories and techniques (including multilevel systems analysis, health finance and economics and health workforce leadership and development)* (HEI 24).

Research and analytical skills

This theme highlighted the need for leaders to develop a sound understanding of research principles and methodology, have the capacity to engage in scholarly inquiry and develop the

ability to critically analyse and evaluate. The ability to interpret and apply relevant research and research-based methods to develop evidenced based solutions to H&HS challenges is key to success as a leader in this sector.

Illustrative examples from the CLOs relevant to this theme include:

(1) *Apply research principles and methods to critically appraise the health management body of knowledge and apply to managerial and leadership practice* (HEI 14).

(2) *Critically analyse relevant information (i.e. clinical data, government policy, research findings) and apply this knowledge to their selected specialised area* (HEI 28).

(3) *Plan, conduct and manage high quality, ethical health & human services evaluation and research relevant to system change, policy development and personal professional practice, drawing upon in-depth knowledge of research principles and methods* (HEI 32).

Professional practice

This theme was associated with the concepts of autonomy, accountability, ethics and life-long learning. Study findings reveal the ability to function both autonomously and collaboratively as an essential member of a multidisciplinary team appears to be fundamental for H&HS leaders in the dynamic and challenging environments in which they work. Personal accountability includes adherence to professional standards, ethical and legal requirements, and the use of critical reflection to encourage on-going learning to maintain and improve professional knowledge and skills.

Illustrative examples from the CLOs related to this theme are:

(1) *Negotiate ethical and practice dilemmas and apply their skills and knowledge to achieving better outcomes for communities, clients and staff* (HEI 10).

(2) *Autonomy and accountability to lead and practice authentic ethical behaviours for their own working and when leading and managing others* (HEI 12).

(3) *Demonstrate capacity to abide by legal requirements and ethical commitments within one's scope of professional responsibility and engage in scholarly inquiry and critical reflection for informing health leadership and managerial practice* (HEI 24).

Communication and collaboration

This theme incorporated concepts of communication, negotiation, advocacy, conflict resolution, teambuilding and problem solving. Study findings indicate that these skills are fundamental for H&HS leaders as they will need to work effectively in teams, navigating difficult conversations and impart information to different audiences in diverse settings.

Examples from the CLOs relative to this theme include:

(1) *Communicate effectively with a range of individuals and groups, using a variety of modes and methods in a Health and Human Service context* (HEI 5).

(2) *Demonstrate sophisticated cultural awareness and a global perspective for working productively as health service professionals in local, national and international settings* (HEI 24).

Creativity and innovation

This theme was associated with the concepts of initiative, driving change, cognitive, technical and entrepreneurial skills, and adaptability. The application of these concepts to leadership appears to be critical to address the complexity of the H&HS sector and to develop innovative approaches to leadership in the sector.

Examples from the CLOs relative to this theme include:

(1) *Cognitive, technical, and creative skills to support the recognition, definition, analysis and solving of complex health economics, management and policy problems: successes and more importantly failures* (HEI 22).

(2) *Be entrepreneurial and innovative thought-leaders* (HEI 37).

Forty-nine subject areas were identified based on the title of the unit. The most frequently occurring subject areas from the unit names of coursework core units were leadership and management found in 31 of the 40 (78%) courses analysed followed by policy (65%) and financial management (60%). Other subject areas can be seen in Table 3 in descending order of frequency.

Discussion

This study identifies and describes the characteristics of postgraduate leadership programs for health and/or human services offered by Australian higher education institutions including CLOs and the subjects covered in the core coursework units.

This study revealed some key areas of resonance across institutions. The programs are offered predominantly through a health faculty located in an urban area, either fully online or a combination of online and face-to-face and being completed in 1.5 years. Most of the programs are nested which means the set of courses of study are offered sequentially providing students with multiple exit points (Tertiary Education Quality and Standards Agency, 2019). The study did not demonstrate any significant difference between courses located in a health or business faculty. This is an interesting finding, as leadership development in H&HS has been based on leadership theories developed in the business

Core subject area (as identified from unit title)	Number of courses	Percentage (%)
Leadership	31	78
Management (incl operational, business)	31	78
Policy	26	65
Financial management	24	60
Research	22	55
Health systems	21	53
Law/Ethics	20	50
Health and/or business economics	18	45
Quality and safety	17	43
Strategy/Strategic management/leadership	15	38
Workforce/HR management	13	33
Change management	11	28
Data/Informatics	11	28
Governance/risk management	9	23
Epidemiology	8	20
Marketing	7	18
Health planning and evaluation	5	13
Professional practice/development	3	8
Project management	3	8
Systems thinking	3	8
Biostatistics	3	8
Organisational culture	3	8

Note(s): Only subject areas in >5% of courses are listed
Source(s): Table by authors

Table 3. Summary of subject area of core coursework units

sector. Many leadership scholars have argued that specific health leadership theories should underpin leadership development activities in the context of health and that there has been little research exploring specific training or curricula (Danilewitz & McLean, 2016; Sonnino, 2016). Therefore, it was expected that differences would exist between courses located in health and business. Moreover, few courses directly titled or expressed clearly in their CLOs a direct focus on leadership theories. Understanding theories and models of leadership is essential for improving leadership skills as this enables students to better hone their approach to leadership and develop their potential (McClellan, 2021; Northouse, 2018; Simuka, 2021). This is a concerning finding, as it might indicate that universities will need to carefully review their learning outcomes to ensure that students are exposed to evidence based leadership development education. However, caution needs to be taken as the researchers did not have access to the curriculum of the identified leadership courses.

The study revealed a high degree of variability in the cost of programs which does not appear to be associated with faculty type or geographical location. This might be due to the majority of courses being delivered online and therefore location plays a lesser role in determining the cost of a course. Study findings reveal that the majority of programs are not driven by accreditation standards. This is in contrast with how leadership development for the medical profession receives input from accrediting bodies. For example, graduate medical education accrediting bodies have recognised the importance of leadership development for the medical profession, as there is much support for curriculum development using educational policies and guidelines (Chan *et al.*, 2016; Frich *et al.*, 2015; Merriam, Rothenberger, & Corbelli, 2021; Sadowski, Cantrell, Barelski, O'Malley, & Hartzell, 2018). Furthermore, the Accreditation Council for Graduate Medical Education has articulated a variety of domains, including interpersonal communication, quality improvement and a systems approach to practicing medicine (Merriam *et al.*, 2021). The accreditation of H&HS leadership courses might provide a more consistent approach to leadership development, contributing to better learning outcomes as has been identified in education (Peterson, 2002); engineering (Jamieson & Shaw, 2020); pharmacy (Reed, Klutts, & Mattingly, 2019); medicine (McKimm & Swanwick, 2011; Mustafa, Stoller, Bierer, & Farver, 2020) and healthcare (Rasa, 2020).

The content analysis of CLOs revealed six themes. These themes provide insights into the attributes and capabilities that students should acquire by completing the program of study. It appears that these themes are in line with current thinking around leadership development and this is evident in the learning of key leadership and management concepts to provide foundational knowledge and skills as supported in the literature (Curtis *et al.*, 2011; Delbert & Jacobs, 2021; Reimer, Allen, & Glover, 2021). This study demonstrates there is a strong focus on generic business skills – such as economics, finance, resource management and people management, and marketing – and this is consistent with another recently published study in the health sector (Khalil & Liu, 2021). Therefore, from a broader perspective it appears that many universities are well situated to develop students' leadership attributes and capabilities. The themes appear to be well embedded into current thinking in relation to leadership development.

System knowledge is important as leaders require both in-depth speciality knowledge as well as the ability to understand the interrelationships within and across the H&HS system (Bahreini, Gholizadeh, Fethiye Gulin, Mahmoud, & Ali, 2021; DeLisi, 2021; Heinen, van Oostveen, Peters, Vermeulen, & Huis, 2019). Increasingly there is an expectation that H&HS leaders will have the knowledge and skills to collaborate across sectors and services globally and there are calls for the development of transnational competence in the context of H&HS leadership (Harrison, Meyer, Chauhan, & Agaliotis, 2019).

Knowledge of research methods and the development of analytical skills helps leaders to understand historical data, analyse patterns in data to improve decision-making and for building effective solutions and be able to critically evaluate alternative possibilities and viewpoints. The ability to conduct or oversee independent industry and discipline-related projects and/or research is a clear requirement for a Masters level Degree in Australia (Australian Qualifications Framework Council, 2013) in addition to industry or professional expectations. Evans (2014, p. 47) argues that effective leadership is dependent upon knowing how research is perceived and effected. The role of leadership educators is seen as crucial in the development of critical thinking skills of students (Jenkins & Andenoro, 2016; Khilji, 2021; Wheeley, Klieve, & Clark, 2022).

To be an effective leader in H&HS, one needs to demonstrate high standards of professionalism in all roles (Hardy & Neve, 2019). Professional practice is strongly associated with critical reflection skills and lifelong learning (Helyer, 2015). Research demonstrates that reflection is a valuable tool for leaders to foster lifelong learning and professional practice (Lang & McNaught, 2013) and the use of critical reflection and reflective practice are recognised as skills that many students only develop at a tertiary level (Thanaraj, 2016; Volpe White & Guthrie, 2016). Leadership as a lifelong learning journey is supported in the literature (Devies *et al.*, 2022; Komives, Mainella, Longerbeam, Osteen, & Owen, 2006) as is the importance of modelling desired professional behaviours (Jardine *et al.*, 2015; Wheeley *et al.*, 2022).

Strong communication and collaboration skills have been identified as important for leaders in the literature (Bharwani, Kline, Patterson, & Craighead, 2017; Harrison *et al.*, 2019; Merriam *et al.*, 2021; Ross, Sen Gupta, & Johnson, 2021). Leaders need to communicate and negotiate with influence to achieve optimum outcomes. The importance of this theme aligns with previous research studies (Blumenthal *et al.*, 2014; Channing, 2020; Flaig *et al.*, 2020; Frich *et al.*, 2015; Geerts *et al.*, 2020; Hendricks *et al.*, 2010; Martins, Isouard, & Freshman, 2019). Results from a study by Lacerenza, Reyes, Marlow, Joseph, and Salas (2017) indicate that whilst hard skills are the easiest to learn and transfer, soft skills matter the most for organisational results. Soft skills are described in different terms in the literature but depict similar concepts such as interpersonal and social skills, personal skills and non-technical skills (Kolsow, 2014; White, 2017). A recent study reporting on interviews with healthcare leaders identified the primary soft skills critical for successful leadership to be communication and listening skills, the ability to be a team builder, conflict management skills and providing networking and mentoring opportunities (Abraham, Stewart, & Solimeo, 2021). The need for culturally relevant leadership learning is also highlighted in the literature (Bertrand Jones, Guthrie, & Osteen, 2016).

A close examination of the creativity and innovation theme highlights several key concepts necessary to drive change as well as organisational success. Leaders need to develop a global mindset and be able to generate bold and novel ideas, a working knowledge of technology that facilitates portability and mobility, new and creative approaches to support service delivery in diverse H&HS settings and to think creatively to generate innovative solutions (Lee, Daugherty, & Hamelin, 2019). There is a clear link between leadership, creativity and innovation (Hughes, Lee, Tian, Newman, & Legood, 2018; Kolsow, 2014; Lee *et al.*, 2020; Nabil, Abderraouf, & Nadira, 2017) but there does need to be more research on how leadership can foster a culture of innovation (Weintraub & McKee, 2019). These skills are often seen at odds with the analytical skills emphasised in medical training (Blumenthal *et al.*, 2012).

These themes confirm the clear challenge for educators to find the right balance between the academic rigour of theoretical and functional facets of leadership and the practical application and behavioural aspects of leadership which has been identified in the literature (Howladar, Rahman, & Taher, 2016; Rennemo & Vaag, 2018; Rhee & Sigler, 2020; Rynes & Bartunek, 2017). Masters level degree programs provide the depth and breadth of conceptual

knowledge as well as the opportunity to integrate and apply this knowledge to practice which is deemed essential for leaders (Tekian & Harris, 2012).

Examination of the core coursework units indicate the relative importance placed on specific subject areas within each qualification. Only seven subject areas were common to more than half of the programs nationally – leadership, management, policy, financial management, research, health systems and law and ethics. The high variability in subjects makes it difficult to identify best practices in terms of curriculum content. This study establishes that there are distinct differences in the core knowledge and skills offered in different programs across Australia and this is consistent with previous findings (Curry *et al.*, 2020; Ritchie & Yen, 2013). A number of topics that appear in the lower section of the list in Table 3, indicating that they are not as frequently included in courses – such as systems thinking and project management – should undoubtedly be afforded greater importance in future program development (Marchildon & Fletcher, 2015; Novo, Landis, & Haley, 2017; Phillips, Stalter, Dolansky, & Lopez, 2016). A key challenge for educators is to identify the universal elements that should be in every postgraduate leadership program and balance this against the nuanced and diverse H&HS sector requirements. The International Leadership Association's general principles could inform this process (International Leadership Association, 2021).

Limitations

A note of caution is necessary as this study relied on published information from institutional websites and is a snapshot of one point in time. Whilst the analysis of website content is certainly a source of relevant information the actual formal course documentation and teaching practices may provide a different perspective. There might be additional program or course information that has not been disclosed. Reliance on university self-reports for information results in reporting "as it is" as opposed to verifying the accuracy of what universities are reporting.

Conclusion

Leadership education has flourished as an academic discipline in higher education. These courses are designed to meet the diverse professional needs and challenges of those working as leaders in the H&HS sector. This analysis yields a comprehensive picture of the status of postgraduate leadership programs for health and/or human services offered by Australian higher education institutions in 2021 and the findings may be thought provoking for leadership educators globally. It has become clear that Australian universities have taken an evidence-based approach to leadership education. However, some more work might need to be undertaken to ensure leadership theories are incorporated into learning outcomes. The program characteristics identified in this study could provide valuable implications for leadership course developers and educators. Further research in the form of interviews with key educators is warranted to provide a deeper understanding of the development and delivery of postgraduate leadership education programs beyond what can be gathered on institutional websites.

References

Abraham, T. H., Stewart, G. L., & Solimeo, S. L. (2021). The importance of soft skills development in a hard data world: Learning from interviews with healthcare leaders. *BMC Medical Education*, *21*(1), 147. doi: 10.1186/s12909-021-02567-1.

Aged Care Workforce Strategy. (2018). *A matter of care*. Canberra: Commonwealth of Australia.

Archibald, M. M. (2016). Investigator triangulation: A collaborative strategy with potential for mixed methods research. *Journal of Mixed Methods Research*, *10*(3), 228–250. doi: 10.1177/1558689815570092.

Australian Bureau of Statistics (2021). *Australian statistical geography standard (ASGS) edition 3*. Australian Bureau of Statistics. Available from: https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026

Australian Qualifications Framework Council. (2013). *Australian qualifications framework*. Adelaide: Australian Qualifications Framework Council.

Bahreini, R., Gholizadeh, M., Fethiye Gulin, G., Mahmoud, Y., & Ali, J. (2021). Components of contributing conditions to strengthen health system management and leadership capacity building: A systematic review and decision making framework. *Leadership in Health Services*, *34*(4), 527–545. doi: 10.1108/LHS-01-2021-0006.

Bekhet, A. K., & Zauszniewski, J. A. (2012). Methodological triangulation: An approach to understanding data. *Nurse Researcher*, *20*(2), 40–43. doi: 10.7748/nr2012.11.20.2.40.c9442.

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, *2*, 8–14. doi: 10.1016/j.npls.2016.01.001.

Bertrand Jones, T., Guthrie, K. L., & Osteen, L. (2016). Critical domains of culturally relevant leadership learning: A call to transform leadership programs. *New Directions for Student Leadership*, *2016*(152), 9–21. doi: 10.1002/yd.20205.

Bharwani, A., Kline, T., Patterson, M., & Craighead, P. (2017). Barriers and enablers to academic health leadership. *Leadership in Health Services (1751-1879)*, *30*(1), 16–28. doi: 10.1108/LHS-05-2016-0023.

Blumenthal, D. M., Bernard, K., Bohnen, J., & Bohmer, R. (2012). Addressing the leadership gap in medicine: Residents' need for systematic leadership development training. *Academic Medicine*, *87*(4), 513–522. doi: 10.1097/acm.0b013e31824a0c47.

Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, *14*(1), 257. doi: 10.1186/s12909-014-0257-2.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. doi: 10.3316/qrj0902027.

Burla, L., Knierim, B., Barth, J., Liewald, K., Duetz, M., & Abel, T. (2008). From text to codings: Intercoder reliability assessment in qualitative content analysis. *Nursing Research*, *57*(2), 113–117. doi: 10.1097/01.nnr.0000313482.33917.7d.

Burns, H. L. (2016). Learning sustainability leadership: An action research study of a graduate leadership course. *International Journal for the Scholarship of Teaching and Learning*, *10*(2), 13. doi: 10.20429/ijsotl.2016.100208.

Busari, J. O. (2013). Management and leadership development in healthcare and the challenges facing physician managers in clinical practice. *International Journal of Clinical Leadership*, *17*(4), 211–216.

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum*, *41*(5), 545–547. doi: 10.1188/14.onf.545-547.

Chan, M. -K., de Camps Meschino, D., Dath, D., Busari, J., Bohnen, J. D., Samson, L. M., . . . Sánchez-Mendiola, M. (2016). Collaborating internationally on physician leadership development: Why now? *Leadership in Health Services*, *29*(3), 231–239. doi: 10.1108/LHS-12-2015-0050.

Channing, J. (2020). *How can leadership be taught? Implications for leadership educators* (pp. 134–148). Michigan: International Council of Professors of Educational Leadership.

Citaku, F., Violato, C., Beran, T., Donnon, T., Hecker, K., & Cawthorpe, D. (2012). Leadership competencies for medical education and healthcare professions: Population-based study. *BMJ Open*, *9*(2), e000812. doi: 10.1136/bmjopen-2012-000812.

Curry, L. A., Ayedun, A. A., Cherlin, E. J., Allen, N. H., & Linnander, E. L. (2020). Leadership development in complex health systems: A qualitative study. *BMJ Open*, *10*(4), e035797. doi: 10.1136/bmjopen-2019-035797.

Curtis, E. A., Sheerin, F. K., & de Vries, J. (2011). Developing leadership in nursing: The impact of education and training. *British Journal of Nursing*, *20*(4), 239–243. doi: 10.12968/bjon.2011.20.6.344.

Danilewitz, M., & McLean, L. (2016). A landscape analysis of leadership training in postgraduate medical education training programs at the University of Ottawa. *Canadian Medical Education Journal*, *7*(2), e32–e50. doi: 10.36834/cmej.36645.

Delbert, T. M., & Jacobs, K. (2021). Best practices in leadership curriculum development: A case study of a curriculum designed to foster authentic leadership skills in graduate students. *Journal of Higher Education Theory and Practice*, *21*(2), 166–183.

DeLisi, P. S. (2021). Leadership of the organization as system. In *Strategic Leadership and Systems Thinking* (pp. 118–137). Taylor & Francis Group.

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, *6*(2), 80–88. doi: 10.1177/1558689812437186.

Devies, B., Ostermeyer, E., Albritton, M. R., Dizor, C., Clay, A., Henry, K. J. R., & Clay, A. Jr (2022). Reimaging curriculum design: Using focus group to enhance leadership educator practice. *Journal of Higher Education Policy And Leadership Studies*, *3*(2), 103–120. doi: 10.52547/johepal.3.2.103.

Ding, L., & Meng, L. (2014). A comparative study of thematic mapping and scientific visualization. *Annals of GIS*, *20*(1), 23–37. doi: 10.1080/19475683.2013.862856.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, *4*(1), 2158244014522633. doi: 10.1177/2158244014522633.

Erlingsson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine*, *7*(3), 93–99. doi: 10.1016/j.afjem.2017.08.001.

Evans, L. (2014). What is effective research leadership? A research-informed perspective. *Higher Education Research and Development*, *33*(1), 46–58. doi: 10.1080/07294360.2013.864617.

Figueroa, C. A., Harrison, R., Chauhan, A., & Meyer, L. (2019). Priorities and challenges for health leadership and workforce management globally: A rapid review. *BMC Health Services Research*, *19*(1), 239. doi: 10.1186/s12913-019-4080-7.

Flaig, J., Alam, A., Huynh, J., Reid-Hector, J., & Heuer, A. (2020). Examining how formal leadership development programs positively influence hospital leaders' individual competencies and organizational outcomes – an evidence-based literature review. *Journal of Healthcare Leadership*, *12*, 69–83. doi: 10.2147/JHL.S239676.

Frich, J. C., Brewster, A. L., Cherlin, E. J., & Bradley, E. H. (2015). Leadership development programs for physicians: A systematic review. *Journal of General Internal Medicine*, *30*(5), 656–674. doi: 10.1007/s11606-014-3141-1.

Fusch, P., Fusch, G. E., & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Social Change*, *10*(1), 19–32. doi: 10.5590/josc.2018.10.1.02.

Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science and Medicine*, *246*, 17. doi: 10.1016/j.socscimed.2019.112709.

Hackstadt, A. (2020). Leadership, development, and expertise: A qualitative content analysis of scholarly communication librarian position announcements. *Journal of Librarianship and Scholarly Communication*, *8*(1), e2376. doi: 10.7710/2162-3309.2376.

Hardy, L. J., & Neve, H. (2019). Professionalism and leadership in medical education: How do they differ and how are they related? *BMJ Leader*, *3*, 67–68. doi: 10.1136/leader-2019-000184.

Harrison, R., Meyer, L., Chauhan, A., & Agaliotis, M. (2019). What qualities are required for globally-relevant health service managers? An exploratory analysis of health systems internationally. *Globalization and Health*, *8*(1), 11. doi: 10.1186/s12992-019-0452-3.

Hart, S. (2016). *The influence of formal education on the leadership development of healthcare executive leaders in Queensland Health*. Queensland: University of Southern Queensland.

Hartzell, J. D., Yu, C. E., Cohee, B. M., Nelson, M. R., & Wilson, R. L. (2017). Moving beyond accidental leadership: A graduate medical education leadership curriculum needs assessment. *Military Medicine*, *182*(7), e1815–e1822. doi: 10.7205/milmed-d-16-00365.

Heinen, M., van Oostveen, C., Peters, J., Vermeulen, H., & Huis, A. (2019). An integrative review of leadership competencies and attributes in advanced nursing practice. *Journal of Advanced Nursing*, *75*(11), 2378–2392. doi: 10.1111/jan.14092.

Helyer, R. (2015). Learning through reflection: The critical role of reflection in work-based learning (WBL). *Journal of Work-Applied Management*, *7*(1), 15–27. doi: 10.1108/jwam-10-2015-003.

Hendricks, J. M., Cope, V. C., & Harris, M. (2010). A leadership program in an undergraduate nursing course in Western Australia: Building leaders in our midst. *Nurse Education Today*, *30*(3), 252–257. doi: 10.1016/j.nedt.2009.12.007.

Howladar, M. H. R., Rahman, S., & Taher, A. (2016). Exploring the relationship between course curriculum and leadership skills development among business graduates in Bangladesh. *SIU Journal of Management*, *6*(1), 1–18.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. doi: 10.1177/1049732305276687.

Hughes, D. J., Lee, A., Tian, A., Newman, A., & Legood, A. (2018). Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly*, *29*(5), 549–569. doi: 10.1016/j.leaqua.2018.03.001.

International Leadership Association. (2009). *Guiding questions: Guidelines for leadership education programs*. Maryland: International Leadership Association.

International Leadership Association. (2021). *General principles for leadership programs: Concept paper*. Maryland: International Leadership Association.

Jamieson, M. V., & Shaw, J. M. (2020). Teaching engineering innovation, design, and leadership through a community of practice. *Education for Chemical Engineers*, *31*, 54–61. doi: 10.1016/j.ece.2020.04.001.

Jardine, D., Carrea, R., Schultz, H., Nobis, A., Lanser, B., Ahmad, I., . . . Hinds, B. (2015). The need for a leadership curriculum for residents. *Journal of Graduate Medical Education*, *7*(2), 307–309. doi: 10.4300/jgme-07-02-31.

Jenkins, D. M., & Andenoro, A. C. (2016). Developing critical thinking through leadership education. *New Directions for Higher Education*, *2016*(174), 57–67. doi: 10.1002/he.20189.

Joubert, L., Boyce, R., McKinnon, K., Posenelli, S., & McKeever, J. (2016). *Strategies for allied health leadership development : Enhancing quality, safety and productivity*. Melbourne: Victorian Government.

Kakim, S., & Priest, K. (2020). Developing leadership capacity using visual thinking strategies. *Journal of Leadership Education*, *19*(13), 7–88. doi: 10.12806/v19/i3/a4.

Khalil, H., & Liu, C. (2021). Design and implementation of a contemporary health administration program for health managers [Brief Research Report]. *Frontiers in Public Health*, *9*(1449), 735055. doi: 10.3389/fpubh.2021.735055.

Khilji, S. E. (2021). An approach for humanizing leadership education: Building learning community and stakeholder engagement. *Journal of Management Education*. doi: 10.1177/10525629211041355.

Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Qualitative research in pharmacy education: Demystifying content analysis. *American Journal of Pharmaceutical Education*, *84*(1), 127–137.

Klenke, K. (2016). *Qualitative research in the study of leadership* (2nd ed.). Bingley: Emerald Group Publishing.

Kolsow, D. (2014). *Leading from within: Building organizational leadership capacity*. Washington, DC: International Economic Development Council.

Komives, S. R., Mainella, F. C., Longerbeam, S. D., Osteen, L., & Owen, J. E. (2006). A leadership identity development model: Applications from a grounded theory. *Journal of College Student Development*, *47*(4), 401–418. doi: 10.1353/csd.2006.0048.

Kwamie, A., Dijk, H. V., & Agyepong, I. A. (2014). Advancing the application of systems thinking in health: Realist evaluation of the leadership development programme for district manager decision-making in Ghana. *Health Research Policy and Systems*, *12*(1), 29. doi: 10.1186/1478-4505-12-29.

Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, *102*(12), 1686–1718.

Lang, R., & McNaught, K. (2013). Reflective practice in a capstone business internship subject. *Journal of International Education in Business*, *6*(1), 7–21. doi: 10.1108/18363261311314926.

Lee, E., Daugherty, J., & Hamelin, T. (2019). Reimagine health care leadership, challenges and opportunities in the 21st century. *Journal of Perianesthesia Nursing*, *34*(1), 27–38. doi: 10.1016/j.jopan.2017.11.007.

Lee, A., Legood, A., Hughes, D., Tian, A. W., Newman, A., & Knight, C. (2020). Leadership, creativity and innovation: A meta-analytic review. *European Journal of Work and Organizational Psychology*, *29*(1), 1–35. doi: 10.1080/1359432X.2019.1661837.

Marchildon, G. P., & Fletcher, A. J. (2015). Systems thinking and the leadership conundrum in health care. *Evidence and Policy*, *15*, 1–16.

Martins, J. M., Isouard, G., & Freshman, B. (2019). Human dimension of health service management. *Australian Health Review*, *43*(1), 103–110. doi: 10.1071/AH17063.

McClellan, J. (2021). Addressing the problem of global leadership theory: Proposing a cognitive process model for leadership training and development. *European Journal of Training and Development*, *46*(5/6), 607–626. doi: 10.1108/EJTD-03-2021-0041.

McKimm, J., & Swanwick, T. (2011). Leadership development for clinicians: What are we trying to achieve? *The Clinical Teacher*, *8*(3), 181–185. doi: 10.1111/j.1743-498X.2011.00473.x.

Merriam, S. B., Rothenberger, S. D., & Corbelli, J. A. (2021). Establishing competencies for leadership development for postgraduate internal medicine residents. *Journal of Graduate Medical Education*, *13*(5), 682–690. doi: 10.4300/jgme-d-21-00055.1.

Middleton, R., Jones, K., & Martin, M. (2020). The impact and translation of postgraduate leadership education on practice in healthcare. *Collegian*, *28*(1), 89–96. doi: 10.1016/j.colegn.2020.01.002.

Miles, J. M., & Scott, E. S. (2019). A new leadership development model for nursing education. *Journal of Professional Nursing*, *35*(1), 5–11. doi: 10.1016/j.profnurs.2018.09.009.

Mustafa, S., Stoller, J. K., Bierer, S. B., & Farver, C. F. (2020). Effectiveness of a leadership development course for chief residents: A longitudinal evaluation. *The Journal of Graduate Medical Education*, *12*(2), 193–202. doi: 10.4300/jgme-d-19-00542.1.

Nabil, H., Abderraouf, G., & Nadira, R. (2017). The impact of leadership on creativity and innovation. *International Journal of Humanities and Social Science Innovation*, *6*(6), 55–62.

Northouse, P. G. (2018). *Leadership: Theory and practice* (8th ed.). Thousand Oaks: Sage Publications.

Novo, B., Landis, E. A., & Haley, M. L. (2017). Leadership and its role in the success of project management. *Journal of Leadership, Accountability and Ethics*, *14*(1), 73-78.

O'Connor, C., & Joffe, H. (2020). Intercoder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods*, *19*, 1–13.

Onyura, B., Crann, S., Tannenbaum, D., Whittaker, M. K., Murdoch, S., & Freeman, R. (2019). Is postgraduate leadership education a match for the wicked problems of health systems leadership? A critical systematic review. *Perspectives on Medical Education*, *8*(3), 133–142. doi: 10.1007/s40037-019-0517-2.

Palys, T. S., & Atchison, C. (2014). Chapter 14: Mixed methods research. In *Research decisions: Quantitative, qualitative, and mixed method approaches* (5th ed., pp. 391–403). Nelson Education.

Peterson, K. (2002). The professional development of principals: Innovations and opportunities. *Educational Administration Quarterly*, *38*(2), 213–232. doi: 10.1177/0013161x02382006.

Phillips, J. M., Stalter, A. M., Dolansky, M. A., & Lopez, G. M. (2016). Fostering future leadership in quality and safety in health care through systems thinking. *Journal of Professional Nursing*, *32*(1), 15–24. doi: 10.1016/j.profnurs.2015.06.003.

Prior, L. (2014). Content analysis. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research* (1st ed.). Oxford University Press. doi: 10.1093/oxfordhb/9780199811755.013.008.

Rasa, J. (2020). Developing effective health leaders: The critical elements for success. *Journal of Hospital Management and Health Policy*, *4*(6), 1–8. doi: 10.21037/jhmhp.2019.11.02.

Reed, B. N., Klutts, A. M., & Mattingly, T. J. (2019). A systematic review of leadership definitions, competencies, and assessment methods in pharmacy education. *American Journal of Pharmaceutical Education*, *83*(9), 7520. doi: 10.5688/ajpe7520.

Reimer, R. D., Allen, S. J., & Glover, G. (2021). Purposeful engagement: Practical wisdom for leadership development. *The Journal of Character and Leadership Development*, Summer, 45–58.

Rennemo, O., & Vaag, J. R. (2018). *Collective leadership learning (CLL) – leader reflections on learning during higher level, experience-based leadership education*. Available from: https://psykologisk.no/sp/2018/12/e13/ (accessed 24 August).

Rhee, K. S., & Sigler, T. H. (2020). Transforming graduate education: Developing leaders for the 21st century. *Journal of Leadership Education*, *19*(12), 15–119. doi: 10.12806/v19/i2/a3.

Ritchie, D. J., & Yen, M. L. (2013). Health services management development: What formal knowledge should support the skills and experience required? *Australian Health Review*, *37*(2), 189–193. doi: 10.1071/ah11116.

Ross, S. J., Sen Gupta, T., & Johnson, P. (2021). Leadership curricula and assessment in Australian and New Zealand medical schools. *BMC Medical Education*, *21*(1), 28. doi: 10.1186/s12909-020-02456-z.

Rynes, S. L., & Bartunek, J. M. (2017). Evidence-based management: Foundations, development, controversies and future. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*(1), 235–261. doi: 10.1146/annurev-orgpsych-032516-113306.

Sadowski, B., Cantrell, S., Barelski, A., O'Malley, P. G., & Hartzell, J. D. (2018). Leadership training in graduate medical education: A systematic review. *Journal of Graduate Medical Education*, *10*(2), 134–148. doi: 10.4300/jgme-d-17-00194.1.

Sethi, A., Schofield, S., McAleer, S., & Ajjawi, R. (2018). The influence of postgraduate qualifications on educational identity formation of healthcare professionals. *Advances in Health Sciences Education*, *23*(3), 567–585. doi: 10.1007/s10459-018-9814-5.

Simuka, J. (2021). Relevance of leadership theories in promoting effective leadership practices. *Africa Journal of Leadership and Governance*, *1*(1), 143–157.

Sonnino, R. E. (2013). Professional development and leadership training opportunities for healthcare professionals. *The American Journal of Surgery*, *206*(5), 727–731. doi: 10.1016/j.amjsurg.2013.07.004.

Sonnino, R. E. (2016). Health care leadership development and training: Progress and pitfalls. *Journal of Healthcare Leadership*, *8*, 19–29. doi: 10.2147/jhl.s68068.

Stata Corp LLC (2021). *Stata 17*. Available from: https://www.stata.com/

Sultan, N., Torti, J., Haddara, W., Inayat, A., Inayat, H., & Lingard, L. (2019). Leadership development in postgraduate medical education: A systematic review of the literature. *Academic Medicine*, *94*(3), 440–449. doi: 10.1097/acm.0000000000002503.

Tekian, A., & Harris, I. B. (2012). Preparing health professions education leaders worldwide: A description of masters-level programs. *Medical Teacher*, *34*(1), 52–58. doi: 10.3109/0142159x.2011.599895.

Tertiary Education Quality and Standards Agency (2019). Guidance note: Nested courses of study. In *Tertiary Education Quality and Standards Agency*. Canberra: Australian Government.

Thanaraj, A. (2016). Improving leadership practice through the power of reflection: An epistemological study. *International Journal of Learning, Teaching and Educational Research*, *15*(9), 28–43.

van Diggele, C., Burgess, A., Roberts, C., & Mellis, C. (2020). Leadership in healthcare education. *BMC Medical Education*, *20*(S2), 456. doi: 10.1186/s12909-020-02288-x.

Volpe White, J. M., & Guthrie, K. L. (2016). Creating a meaningful learning environment: Reflection in leadership education. *Journal of Leadership Education*, *15*(1), 60–75. doi: 10.12806/v15/i1/r5.

Weintraub, P., & McKee, M. (2019). Leadership for innovation in healthcare: An exploration. *International Journal of Health Policy and Management*, *8*(3), 138–144. doi: 10.15171/ijhpm.2018.122.

Wheeley, E., Klieve, H., & Clark, L. (2022). Developing reflection and critical thinking in a leadership education course: Leading learning and change. *Studies in Higher Education*, *47*(12), 2575–2589.

White, B. J. (2017). A leadership and professional development teaching and learning model for undergraduate management programs. *Journal of Higher Education, Theory, and Practice*, *17*, 57–74.

White, M. D., & Marsh, E. E. (2006). Content analysis: A flexible methodology. *Library Trends*, *55*(1), 22–45. doi: 10.1353/lib.2006.0053.

White, B. A. A., Bledsoe, C., Hendricks, R., & Arroliga, A. C. (2019). A leadership education framework addressing relationship management, burnout, and team trust. *Baylor University Medical Center Proceedings*, *32*(2), 298–300. doi: 10.1080/08998280.2018.1550346.

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