Factors affecting the transfer generalisation and maintenance of interpersonal skills related to conflict resolution and leadership.

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Table of Contents

List of Published Papers

The following papers were published and are included as studies in chapters of this dissertation.

Vandergoot, S., Sarris, A., & Kirby, N. (2018). Factors that influence the training transfer and maintenance of conflict resolution programs of Healthcare training units: a retrospective study. in *Applied Psychology Readings: Selected Papers from Singapore Conference on Applied Psychology 2017* (pp. 103-121). Singapore, Springer. doi:10.1007%2F978-981-10-8034-0_7

Vandergoot, S., Sarris, A., Kirby, N., & Ward, H. (2018). Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and perceived impact of learning conflict resolution skills. *Journal of interprofessional care,* 32(2), 211-219. doi.org/10.1080/13561820.2017.1383975

Vandergoot, S., Sarris, A., & Kirby, N. (2019). Factors that influence the training generalisation and maintenance of managerial-leadership skills: A retrospective study. *Performance Improvement Quarterly*. (in press) doi:10.1002/piq.21297

List of Conference Presentations

The studies I have presented at conferences to date, in chronological order, are as follows:

Factors that influence the transfer generalisation and maintenance of managerial-leadership skills: a retrospective study was presented as a peer-reviewed poster presentation at the bi-annual APS 11th Industrial and Organisational Psychology Conference, Melbourne, Australia, 2-4 July 2015 (Study three)

Factors that influence the transfer generalisation and maintenance of conflict resolution programs of healthcare training and development units: a retrospective study was presented as a peer-reviewed oral presentation at the annual Singapore Conference for Applied Psychology 2017, Singapore, 21-22 June 2017. It was awarded *Best Student Prize* at the conference (Study two).

Undergraduate medical and nursing students' motivation and attitudes towards interprofessional learning and their impact on utilising conflict resolution skills was presented as a peer-reviewed oral presentation at the Australian & New Zealand Association for Health Professional Educators (ANZAHPE) Conference, Adelaide, South Australia, 11-14 July, 2017 (Study one).

Factors that influence the transfer generalisation and maintenance of managerial-leadership skills: a retrospective study was presented as a peer-reviewed oral presentation at the bi-annual APS 12th Industrial and Organisational Psychology Conference, Sydney, Australia, 13-15 July 2017 (Study three).

Undergraduate medical and nursing students' motivation and attitudes towards interprofessional learning and their impact on utilising conflict resolution skills was presented as a peer-reviewed poster presentation at the 11th annual Florey International Postgraduate Research Conference, Adelaide, South Australia on 20 September 2017 (Study one).

Undergraduate medical and nursing students' motivation and attitudes towards interprofessional learning and their impact on utilising conflict resolution skills was presented as a peer-reviewed oral presentation at the annual Singapore Conference for Applied Psychology 2018, Singapore, 21-22 June 2018 (Study one).

Individual and organisational factors that influence training transfer and maintenance of managerial-leadership programs was presented as a peer-reviewed oral presentation at the bi-annual APS 13th Industrial and Organisational Psychology Conference, Adelaide, Australia, 11-13 July 2019 (Study four).

List of Figures

List of Tables

List of Abbreviations

ABS	Australian Bureau of Statistics
EI	Emotional Intelligence
Generalisation	Transfer generalisation; skill generalisation
GSE	General self-efficacy
HR	Human Resources
IPE	Interprofessional education
IPL	Interprofessional learning
KSA	knowledge, skills and/or attitudes
Maintenance	Maintenance of training; transfer maintenance; skill maintenance
SDT	Self-determination theory
Transfer	Transfer of training; training transfer; skill transfer
TII	Transfer implementation intentions
VET	Vocational Education and Training

Abstract

This thesis examined transfer generalisation and maintenance of conflict resolution and leadership knowledge, skills and attitudes to the workplace. The main aim was to examine training transfer in terms of the generalisation and maintenance of these interpersonal skills, and how these processes are influenced by multiple individual and organisational factors. A review of relevant research suggested that separate and concurrent consideration of transfer generalisation and maintenance may help to explain previous inconsistent research results. Understanding relevant factors facilitating generalisation and/or maintenance may also help explain the reported poor transfer and cost effectiveness of many training programs.

Individual factors examined in this series of studies included self-efficacy, motivation (intrinsic motivation, motivation to learn, and motivation to transfer), organisational commitment, transfer implementation intentions, and emotional intelligence. Organisational factors examined included organisational support, social and goal-setting cues, opportunity to use/practice skills, and perceived support and barriers to training transfer.

The first study examined the transfer generalisation of conflict resolution skills in relation to medical and nursing undergraduates (n=158). Results found the individual factors, motivation-to-learn and attitudes to interprofessional learning, predicted transfer generalisation of conflict resolution skills immediately after training, with a significant difference between the groups. The difference was attributed to the lack of clinical placements (organisational relevancy) for medical students at the time of training.

The second study examined transfer of conflict resolution skills retrospectively for medical and healthcare professionals (n=64), up to three years post-training. Results showed both individual and organisational factors were important for transfer generalisation and maintenance.

The third study examined training transfer of managerial-leadership skills for managers (n=147), up to fourteen years post-training. Results supported Study two; both individual and organisational factors were important for transfer generalisation and maintenance. Results from qualitative data provided support for examining transfer generalisation and maintenance separately in the same study.

The fourth study examined transfer generalisation and maintenance of skills from two managerial-leadership programs (n=36). Mixed methodology of a survey at baseline, post-training and three-month follow-up, plus interviews, was employed. For transfer generalisation, results found that only individual factors were important immediately after training, but both individual and organisational factors were important three months after training. For transfer maintenance however, only organisational factors were important, measured three months post-training. Together with qualitative data results, this study also provided support for examining transfer generalisation and maintenance separately in the same study. Overall, this dissertation found different combinations of individual and organisational factors were associated with transfer generalisation and maintenance of interpersonal skills. Future research needs to examine the construct validity of these two transfer processes to confirm their examination concurrently as recommended in this thesis. Theoretical implications include the need to consider transfer generalisation and maintenance as separate overlapping processes in the transfer of complex interpersonal skill-sets to the workplace. Practical implications include the need for organisations to consider both relevant individual and organisational factors that facilitate transfer generalisation and maintenance to maximise workplace training program return-on-investment.

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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Sonya

Chapter 1: Introduction

1.1 Foreword

The aim of this thesis was to investigate factors that influence the transfer (generalisation and maintenance) of conflict resolution and leadership skills from training to the workplace at an individual level. Although there is a body of research that focuses on the transfer of education-related learning, associated with, for example, primary and secondary schools, the focus of this thesis was workplace transfer (*i.e.*, knowledge, attitudes and/or skills learnt in training with the intention of being transferred to, and maintained at, work).

As outlined in Baldwin and Ford's (1988) Transfer model, training transfer research has focused on three broad categories of influencing factors, namely:

1. individual characteristics, such as personality and motivation;
2. training design, such as learning principles and instructional techniques; and
3. work environment or context, such as the organisational culture or transfer climate.

Due to the large body of research in these three areas, only two were the focus of this thesis: individual and work-context factors in relation to the interpersonal skills, or "soft" skills, of conflict resolution and leadership at an individual level (team-related transfer was not examined).

The research studies undertaken to explore training transfer were based on well-established professional training courses. Checks were undertaken to confirm that the training provided to participants was effective and efficient. Likewise, though measurement of training transfer is important, it was not the focus of this thesis, and therefore it is not discussed in detail.

This chapter outlines the key issues, background theories and research. An overview of work-related training in Australia is provided as well as the importance of employee competence in conflict resolution and leadership knowledge, skills and attitudes (KSA). The "transfer problem" and why it has been labeled as such, is outlined, followed by suggestions for addressing the "problem". Literature on individual and organisational factors that have been found to influence the transfer of training, either positively or negatively, is also reviewed. The chapter concludes with a discussion of gaps and limitations found in the literature and how these may be addressed. This includes a brief outline of each of the included studies.

1.2 The Australian context

Organisations worldwide collectively spend billions of dollars on work-related training and development to sustain organisational growth and competitive advantage; as well as to upskill employees to improve their performance, productivity and innovativeness (Govaerts, Kyndt, Vreye & Dochy, 2017). Estimates of US training and development expenditure ranges from US$100-130 billion per year (Baldwin & Ford, 1988; Chiaburu, Van Dam & Hutchins, 2010). In 2011, $8.68 billion was spent on Australian accredited training for 1.4 million enrolments (Allen Consulting Group, 2013). This amount was spent when Australia had a workforce of approximately 11.5 million people (ABS, 2012).

Organisations invest in training to address certain needs or challenges. In the late 1980s, there was recognition that better understanding was needed of the challenges faced by Australian organisations coming into the 21st century. *The Enterprising Nation: Renewing Australia's Managers to Meet the Challenges of the Asia-Pacific Century: Report of the Industry Task Force*

on Leadership and Management Skills Report (commonly referred to as the "Karpin Report") was the summary of three years' work of a Taskforce commissioned by the Australian government. The taskforce investigated how Australian managers were educated and prepared for their work and leadership, and the challenges they faced (Karpin, 1995). The Karpin report made several recommendations for change. It highlighted that globalisation, diversity, lifelong learning and enterprise, enterprising organisational cultures, small businesses, and best-practice educational institutions were essential to meet future organisational challenges and learning needs. Furthermore, the report advocated that managers and leaders needed well-structured, systematic education and continuous development to:

(1) increase their leadership skills and competencies;

(2) maximise business value to the national economy through their performance within business; and

(3), to sustain reform and constructive change (Karpin, 1995).

A surge in leadership and management training followed the release of the Karpin report, with an emphasis on leadership competencies. Many organisations and educational settings implemented its recommendations, which continue to be relevant today (Samson, 2011). Samson's (2011) review of the Karpin report found its 28 recommendations to be robust and strongly related to organisational success.

The Australian Bureau of Statistics (ABS) (2003) *Employer Training Expenditure and Practices Survey 2001-02* found that 81% of Australian employers provided some training for their employees, of which 41% was structured training (*i.e.*, training that has a pre-determined plan and format, and usually contained instruction of some sort, such as a workshop or seminar) and 79% was unstructured training (*i.e.*, does not have a specified content or pre-determined plan,

such as on-the-job training). Smith (2003) points out that the percentage of training provided was much higher for large businesses and organisations (employing more than 200 people). Quoting the ABS 1996 *Training Expenditure Survey*, Smith (2003) reported that 93% of large businesses and organisations provided structured training for their employees compared to only 20% of micro-employers (employ less than five staff) and 60% of small business employers (employ between 10-19 staff). Net direct expenditure on structured training during the 2001-02 financial year was $3,652.8 million, and averaged $458 per employee or 1.3% of total gross wages and salaries (ABS 2003). This constitutes a considerable financial investment in training.

More recently, the ABS *Survey of Work-Related Training and Adult Learning* (2016-2017) found that 40.9% of Australians aged 15-74 years participated in formal and/or non-formal learning in 2016-17; a decrease from previous years (e.g., 46.4% in 2013 and 48.9% in 2005) (ABS, 2017). In 2016-17, participation in formal and/or non-formal learning was higher for those in the workforce (i.e., people working or looking for work) (46.1%) than for those not in the labour force (28.1%) (ABS, 2017). However, this rate (46.1%) had decreased from previous rates recorded in 2005 (59.1%) and 2013 (53.1%) (ABS, 2017).

According to Smith (2003), there are varying reasons why organisations provide staff training and the form it takes, ranging from business strategy, business change management, organisational tradition and industrial relations climate, to name a few. Businesses prefer enterprise-specific training in the workplace, under the responsibility of line-managers and internal training departments, rather than traditional training formats in classroom-type settings with training specialists (Smith, 2003). Smith, Oczkowski, and Hill (2009), in their study into why employers provide Vocational Education and Training (VET) training, found three key factors: the overall importance of training to the organisation (e.g., level of organisational culture

and commitment to training); the level of workforce skills in the organisation; and recruitment difficulties. Further, they state that compliance with government regulation and the need for skills, whether specific to a particular job or general skills upgrading, are key drivers of vocational training by employers.

However, there is a lack of coordinated effort to measure all training that takes place in Australian organisations and businesses. Training can be either accredited (*i.e.*, formally recognised training which provides standardised, portable, nationally recognised qualifications, often competency-based such as VET) or non-accredited training (unrecognised outside of its specific context) (Knight & Mlotkowski, 2009). Although there is strong support within the VET industry in regards to its accredited training programs and the benefits they provide, there does not seem to be any research that encompasses accredited and non-accredited training in Australia, or the examination of the differences between their relative successes. As Dawe (2003) points out, much training in Australia is non-accredited, developed internally by staff, such as managers, Human Resource (HR) or training personnel, or external consultants, to meet enterprise and employees' needs. Research on such training, if it occurs, does not appear to be publicly accessible. Plus, the ABS definition of structured training includes accredited training but does not necessarily exclude non-accredited training, adding to the difficulty in separating and understanding any differences between these types of training. Hence, commenting on their relative effectiveness is difficult.

Although the research literature shows that a considerable amount of training, predominantly structured, takes place in Australia, Dawe (2003) argues that actual workplace training provided to employees is underestimated. This is due to the difficulty in measuring and examining training that is independent of the VET system (Dawe, 2003). Although the ABS no

longer collects Australian training expenditure data, the amount of expenditure and training provided is likely to have increased since the 2001-2002 report. In addition, statistics on training content or skills that Australian organisations invest in, such as conflict resolution or leadership skills, is more difficult to ascertain.

1.3 Conflict Resolution

Interpersonal conflict is a significant and unavoidable occurrence in organisations. Metcalf (2014) reports that working days lost due to inter-office conflict has increased by 30% since 2009. Due to globalisation and the growing complexity of organisations, interpersonal conflict issues are estimated to consume approximately 18-25% of managers' time; a figure that has nearly doubled since the mid-1980s (Lang, 2009). Time spent managing conflict is likely to increase as factors that can lead to increased conflict are unlikely to change in the foreseeable future (Lang, 2009). Such factors include the growing complexity and diversity of teams and organisations; the use of teams and group decision-making; the prevalence of integrated systems and processes; and globalisation. The ability to deal with conflict effectively is an important skill for effective team-work, organisational sustainability and growth (Govaerts *et al.,* 2017; Lang, 2009). Increasingly, it is an important skill for managerial roles (Back & Arnold, 2005; Gilin Oore, Leiter & LeBlanc, 2015).

Globalisation and technological advances in the past few decades have led to higher competition in global markets, putting pressure on organisations to be more efficient and adaptable (Govaerts *et al.,* 2017; OECD, 2013). This has translated to different demands for workforce skills and competencies. The Organisation for Economic Co-operation and

Development (OECD) (2013) reports a growing world-wide demand for high-level cognitive and interpersonal skills, due to changes in global markets. Skills such as interpersonal communication and conflict resolution, self-management, and the ability to learn are important in helping organisations weather the uncertainties of a rapidly changing labour market (OECD, 2013). The OECD (2013) emphasise the importance of these skills, stating that "skills transform lives, generate prosperity and promote social inclusion"' (p. 26). In its report, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, in which Australia was one of the participating countries, the OECD found that those with lower levels of literacy and numeracy, together with lower cognitive and interpersonal skills, were more than twice as likely to be unemployed, have reduced access to basic services, and tended to report poorer health outcomes.

Dealing ineffectively with conflict can lead to considerable mental and emotional turmoil among staff which can manifest in mental stress. Work-related mental stress is defined as "the adverse reaction experienced by workers when workplace demands and responsibilities are greater than the worker can comfortably manage or are beyond the workers' capabilities." (Leka *et al.,* 2003, cited in Safe Work Australia, 2013, p. 1). Mental stress impacts considerably on the Australian economy and workforce productivity. For example, the cost of mental stress to the Australian economy in 2007 was estimated to be $14.81 billion; and $10.11 billion in stress-related absenteeism and presenteeism (*i.e.,* employees being at work but not being productive due to either physical or mental illness, disillusionment, as a protest against perceived unfairness, or poor work-life balance arrangements) (APS Commission 2012). These are direct costs to employers and do not include hidden costs related to re-training and/or costs associated with high staff-turnover such as selection and recruitment (Safe Work Australia, 2013).

Work-related mental stress may lead in some cases to expensive Workers' Compensation claims. Safe Work Australia (2013) reported that the most expensive Worker's Compensation claims in Australia were for work-related mental stress. These claims typically involve long periods of absence from work, increasing their cost, and account for 95% of all mental disorder claims over the past 10 years (Safe Work Australia, 2013). Mental stress claims fall predominantly within a sub-category called "work pressure". Work pressure includes mental stress disorders arising out of work-roles and work-loads, and include workplace interpersonal conflicts and performance issues (Safe Work Australia, 2013).

Interestingly, in their report *The incidence of accepted Workers' Compensation claims for mental stress in Australia,* Safe Work Australia (2013) emphasise that they report only on accepted mental stress claims. Their data does not include information on unsuccessful claims; on workers who experience mental stress but choose not to claim workers' compensation; or on workers who are not covered by the Workers' Compensation Act. Quoting the ABS, Safe Work Australia (2013) state that 70% of workers reporting work-related stress did not submit a Workers' Compensation claim. Note that some workers were not included in these Workers' Compensation Claims statistics. For example, Western Australian police and Australian Defence personnel are covered under separate legislation, and Australian Government Workers' Compensation schemes generally do not cover self-employed workers. Hence, the prevalence of workplace mental stress is likely to be much higher than reported by Safe Work Australia (2013); a fact emphasised in its report.

In light of the impact of mental stress, interpersonal skills such as dealing effectively with conflict should be high on the training agenda of all organisations. Such training could potentially

save billions of dollars in lost productivity, absenteeism and Workers' Compensation claims, whilst meeting global market demands for competitiveness with respect to personnel.

A particular focus in recent years has been the interpersonal conflict and its management in healthcare organisations worldwide. Historical hierarchical relationships within and between healthcare disciplines, such as medical and nursing professions, has been acknowledged to be detrimental to both patients and staff. Traditionally seen as an "in house" problem, there was little impetus to address staff conflict when it was perceived as part of acceptable professional initiation and apprenticeship (Baldwin & Daugherty, 2008; Brinkert, 2010; Kaufman, 2011). However, increasing evidence over the past 20 years has shown that interpersonal staff conflict affects not only the relationships between staff but also the quality of patient-care (Baldwin & Daugherty, 2008; Brinkert, 2010; Gilin Oore *et al.*, 2015; Katz, 2007; Lee, Berger, Awad *et al.*, 2008; Rogers & Lingard, 2006). For example, Brinkert (2010) literature review of conflict in nursing (literature from 1995 to 2008) found that conflict was pervasive; what he called "a routine feature" in a profession known for "eating its young" (p. 145).

Workplace conflict of this kind has many direct and indirect costs. Direct costs include burnout, higher absenteeism and turnover, litigation, lost management productivity, disability and worker compensation claims, and regulatory fines or loss of contracts or provider status (Brinkert, 2010). Conflict was also found by Brinkert to lead to poor decision-making, medication errors, patient injuries including deaths, and increased care expenditures associated with adverse patient outcomes. Indirect costs identified included damaged team morale and emotional costs, lost opportunities and reputation, costs to patients and their families, and increased incidence of disruptive behaviour (Brinkert, 2010). Brinkert's analysis highlighted that negative effects of persistent conflict continue long after its initial manifestation and were linked

to decreased work satisfaction, poor team performance and negative work climate; damaging individuals both physically and psychologically.

Interestingly, Brinkert (2010) points out that there are multiple sources and levels of conflict at both the micro and macro levels. In relation to nursing, he found that conflict was predominantly between nurses, secondly between nurses and other health care professionals such as doctors; and thirdly, between nurses, patients and their families. Intra- and inter-professional conflicts were often due to tensions regarding power or status (e.g., perceptions of roles, goals, seniority or generational differences). Particular hospital departments are "known" as areas for conflict, such as operating rooms/surgery or palliative care, or where end-of-life decision-making may be involved (Brinkert, 2010; Katz, 2007). Conflict in healthcare is predominantly due, according to Brinkert, to the challenges of perspective-taking and integration of different points of view, skills which are addressed in conflict management training courses.

Lang (2009) found in his literature review of US-based and non US-based universities, a lack of emphasis on conflict resolution education in business curricula. Only 44 of 97 US-based and 14 of 69 non US-based universities had clearly identified conflict management courses. Also, 26 of the US-based and seven of the non US-based universities combined conflict management with other content in their curricula, including organisational behaviour, communication, or management and leadership (Lang, 2009). Similarly, healthcare professionals such as doctors and nurses are traditionally not trained in conflict resolution skills (Garcia Vivar, 2006; Kaufman, 2011; Lee *et al.*, 2008). However, there has been more attention paid to training healthcare professionals in these skills in the last 10-12 years only (e.g., Katz, 2007; Rogers & Lingard, 2006).

Although research suggests that conflict is increasingly part of organisational life and that conflict resolution skills are important for healthcare professionals and managers (Brinkert, 2010; Lang, 2009), relevant education and business curricula do not reflect this need in the training provided (Brinkert, 2010; Lang. 2009; Walczak & Absolon, 2001). Additionally, when up-skilling employees in interpersonal skills such as conflict resolution, organisations assume such training will be effective and that employees will transfer this learning to the workplace. However, there is a lack of research specifically on conflict management training and its transfer, generalisation and maintenance in the workplace (Gitonga, 2007; Zweibel, Goldstein, Manwaring & Marks, 2008). Furthermore, little research has been done on related interpersonal skills such as negotiation (e.g., Loewenstein, Thompson & Gentner, 1999) or communication (e.g., Heaven, Clegg & Maguire, 2006). This lack of research is surprising considering how common conflict is in healthcare and other workplaces (Back & Arnold, 2005; Katz, 2007; Kaufman, 2011) and given the potential serious health consequences and expense to business and organisations (Baldwin & Daugherty, 2008; Brinkert, 2010; Brock, Abu-Rish, Chiu *et al,* 2013; Gilin Oore *et al.,* 2015; Lee *et al.,* 2008; Suter, Arndt, Arthur *et al.,* 2009).

Training transfer is often quoted as being only 10-15% effective in relation to training expenditure (e.g., Baldwin & Ford, 1988; Kontoghiorghes, 2002). Though a problematic statistic in terms of how it is calculated (Ford, Yelon & Billington, 2011), it would be viewed as a very poor organisational return-on-investment. Yet such training is necessary in light of the costs associated with a workforce that is ineffective at managing conflict (Katz, 2007). Accordingly, research regarding training transfer (generalisation and maintenance) of conflict resolution training is needed to evaluate and improve training outcomes.

1.4 Leadership

Leadership in organisations is broadly defined as the process of influencing others and facilitating individual and collective efforts to achieve team and/or organisational objectives, goals and strategies, through shared understanding and agreement on what needs to be done and how (Yukl, 1989; Yukl, 2012). It may include influencing subordinates' and team's commitment, identification and compliance in task behaviour to achieve organisational objectives (Yukl, 1989; Yukl, 2012).

Ample evidence exists of the relationship between effective leadership and positive organisational outcomes, such as those of employee attraction, engagement, retention and productivity (Baldwin, Pierce, Joines & Farouk, 2011). Organisational strategies require large input from managers to implement, change, lead and direct staff to make required changes. For example, Brinkert (2010) recommended nurse-physician collaboration strategies at an organisational and policy level; patient-provider partnership communication mechanisms at hospital administration-level (e.g., ethics committee and legal departments); and the development of a conflict program infrastructure with conflict resolution processes and activities. All of these levels require a "committed leadership team in order to effectively manage conflict" (p. 151) and the required organisational change.

To bring about organisational change, managers and organisational leaders need communication, conflict resolution and leadership skills. In Australia, recognition of this occurred with the Karpin report. In his 2011 review, Samson stated that the Karpin report was instrumental in raising organisational, business and community awareness of the relationship between management capability and organisational performance. Day, Fleenor, Atwater, Sturm and McKee (2014) contend that leadership development is a prominent concern of all

organisations. It is critically important to educate, train and develop organisational leaders, especially in non-technical management skills (e.g., leading and managing people, communication, conflict resolution, and fostering positive organisational climates and culture) (Samson, 2011). A 2006 HR survey regarding issues to address organisational growth and expansion listed 'identifying and developing leadership talent' as the number one problem of HR directors (Avolio, Avey & Quisenberry, 2010). Further, there has been a research focus on pinpointing the competencies of highly effective managers; considered highly valuable for individuals and organisations (Baldwin *et al*, 2011).

Yukl (2012) describes organisational leadership role competencies or behaviours as belonging to four meta-categories, all of which involve determinants of performance. The main two meta-categories are task-oriented behaviours and relations-oriented behaviours. Task-oriented behaviours include clarifying, planning, problem-solving and monitoring operations, whereas relationship-oriented behaviours include supporting, developing, recognising and empowering (Yukl, 2012). The other two meta-categories are change-oriented behaviours and external-oriented behaviours (Yukl, 2012). Change-oriented behaviours include advocating and envisioning change, encouraging innovation and facilitating collective learning, and external oriented behaviours involve networking, external monitoring and representing (Yukl, 2012). Most of these behaviours rely heavily on interpersonal skills to influence and enact change.

As van der Locht, van Dam and Chiaburu (2013) point out, and the definition of leadership highlights, managers operate in social contexts, and therefore, interpersonal skills are crucial for organisational effectiveness, performance and success. Managerial leadership, a term that acknowledges the incorporation of both management and leadership skills required for current global organisational personnel management (Collins & Holton, 2004) as well as the four

meta-categories of leadership behaviours, is a complex combination of "hard" task-oriented and "soft" interpersonal relations-oriented skills. Van der Locht *et al.* (2013) assert that due to managers' crucial role in organisations meeting their objectives and goals, management training often focuses on developing skills to increase managers' influence over their workplace "social" relationships.

The link between effective conflict resolution and organisational leadership and the success of interpersonal relationships, task achievement, organisational teams, and top management decisions has already been established (Baldwin *et al.,* 2011; Lang, 2009). Organisational effectiveness could be enhanced with employee competence in conflict resolution and leadership skills. However, being trained is these skills assumes they will transfer to the workplace. Baldwin *et al.* (2011), however, contend that such management competence in these skills remains the exception rather than the rule. Additionally, though there is perceived value in effective training, organisations need to maintain competitive cost structures and fiscal responsibility for optimal training investment in terms of their return on employee development investment (Avolio *et al.,* 2010). Unfortunately, this has proven to be a problematic issue, one that the field has labelled the "transfer problem" (Baldwin & Ford, 1988).

1.5 The Transfer Problem

As stated earlier, organisations worldwide, including Australia, collectively spend billions of dollars on training and development with the premise that staff training can effectively fix organisational problems by upskilling employees (Govaerts *et al.*, 2017). Although workplace training cannot be expected to address all organisational problems or be held solely responsible

for organisational productivity, the amount of time and money invested in training justifies the focus on its evaluation and effectiveness. Training should, at least, meet minimal expectations regarding the transfer of key knowledge or skills for utilisation in the workplace.

From an organisational point of view, training expenditure and investment benefits should be in the form of improved performance, productivity, profit, safety and/or market share (Salas & Cannon-Bowers, 2001). As a minimum, there is an expectation that training should reflect the value, in some form, of the resources expended. Also, it is reasonable to expect that its effectiveness will be maintained for more than just a short period of time after training completion. No particular time frame has been agreed on in the literature regarding how long new skills learnt in training should be maintained. Twelve months post-training has been a benchmark maximum used by several studies to measure new skills and knowledge utilisation, or what is termed training transfer, after the training event (for example, studies by Axtell, Maitlis & Yearta, 1997; Govaerts *et al.*, 2017; Saks & Burke, 2012; Taylor, Russ-Eft & Chan, 2005).

Training transfer, defined as the degree to which participants effectively apply and maintain the KSA gained in training to their workplace (Baldwin & Ford, 1988), cannot be taken for granted. Cheng and Hampson (2008) state that even successful training programs cannot guarantee that newly learnt skills acquired during training will be transferred to the workplace. Pessimistically, Bransford and Schwartz (1999) point out that many studies fail to demonstrate transfer or do so by generous success criteria, and that new behaviours are not reliably repeated in new situations. In their review, Burke and Hutchins (2007) report varying results including that:

- only 10% of training results in a behaviourial change;
- less than 10% of training and development expenditure is transferred back to the organisation;

- 40% of trainees fail to transfer immediately after training;
- 70% of training programs fail to transfer one year post-training; and that
- ultimately only 50% of training investments result in organisational or individual improvements.

Kim and Lee (2001) also cite various estimates of transfer, including 40% of training content is transferred to the workplace immediately after training; approximately 25% of transfer is maintained after six months, or only 15% of skills transferred are maintained after one year. Other studies cite similar percentages, indicating that 10-15% of training expenditure results in transfer or value to the organisation (e.g., Baldwin & Ford, 1988; Burke & Hutchins, 2007; Kontoghiorghes, 2002). As Ford *et al.* (2011) point out, if only 10% of training and development expenditure results in organisational value or produces behaviourial change, then 90% of what is spent is wasted. Ford *et al.* (2011) point out the lack of empirical evidence to support the accepted and repeatedly cited 10%, which they state originated from Georgensen (1982) and Baldwin and Ford (1988) reviews. Though the 10-15% estimate of transfer is problematic (Ford *et al.*, 2011), estimates in the literature are typically low thus projecting a pessimistic view of current training return-on-investment. From a research point of view, a high level of variance has been found in the extent to which individuals apply training KSA to the workplace (Blume, Ford, Surface & Olenick, 2019).

Baldwin and Ford's (1988) prominent literature review summarised factors that influence transfer as belonging to three broad categories:

1. trainee characteristics,
2. training design, and
3. work environment.

Baldwin and Ford, as a part of their 1988 influential review, developed the Model of the Transfer Process. Their model highlighted these three categories of factors, what they termed training inputs. These influenced the training outputs of learning and retention, which preceded the conditions of transfer. This included generalisation and maintenance, which were also influenced by the three category of factors (*i.e.*, individual, training and organisational factors).

Baldwin and Ford's (1988) review outlined future research directions for investigating factors affecting transfer which many researchers from diverse disciplines (e.g., psychology, business, management, human resource development, training, and adult learning) have since attempted to address. Since their review, hundreds of studies have examined factors in relation to these three categories.

A more recent model of training transfer is that of the Dynamic Transfer Model, as developed by Blume *et al.* (2019). Their model highlights the iterative and evolving nature of training transfer, with skill transfer unfolding over time. Due to changes in interest, people, context and situations, and the influences they may bring, these changes affect the ability and motivation of people attempting to generalise and maintain skills, often over multiple transfer attempts. This thesis utilises Baldwin and Ford's (1988) Model of the Transfer Process as it is the most dominant model in the research literature and the basis of the majority of research in this area. In addition, it uses Blume *et al.* (2019) Dynamic Transfer Model in the development of hypotheses to assist to explain inconsistencies in research results.

Despite research intending to increase understanding of factors influencing transfer, gaps in knowledge remain. In addition, research to date has conflicting or inconsistent results. Ford *et al.* (2011) suggest that a better understanding of the transfer "problem" is possible with an integrated analysis of the three categories. This would enable a better and more comprehensive

understanding of the variations in transfer across individual differences, work contexts, and/or training techniques. Hence, rather than aiming to predict or estimate a percentage of transfer that may occur as an outcome of training (with inherent difficulties in doing so), being able to predict the circumstances where training transfer is more likely to occur will be more practical an outcome (Ford *et al.*, 2011). This would hopefully offer practical recommendations to improve return of investment for stakeholders. For example, differences in trainee motivation and ability, opportunities to apply newly learnt skills in the workplace, the relative suitability of training for job conditions and performance (Ford *et al.*, 2011) may reveal a pattern of key factors that enable the prediction of the likely extent of training transfer possible.

Currently, a pattern of key factors to predict transfer generalisation or maintenance has been elusive, with research reviews highlighting inconsistencies or mixed findings (e.g., Aguinis & Kraiger, 2009; Alvarez, Salas & Garofano, 2004; Baldwin & Ford, 1988; Burke & Hutchins, 2008; Cheng & Hampson, 2008; Cheng & Ho, 2001; Grossman & Salas, 2011; Tharenou, Saks & Moore, 2007). Consideration of this research suggests that focusing on two issues regarding the transfer of skills may assist with explaining these inconsistencies. These two issues are:

1. how training transfer generalisation and maintenance are defined and considered (*i.e.*, more immediate transfer generalisation versus maintenance of skills); and
2. the differences between skills trained or studied (*i.e.*, "hard" (technical) skills compared to "soft" (interpersonal) skills).

1.6 Transfer generalisation and maintenance of skills

Baldwin and Ford (1988) defined training transfer as including "both the generalisation of learnt material to the job and the maintenance of trained skills over a period of time on the job" (p64). Many definitions of training transfer, such as this one, incorporate both generalisation and maintenance of skills after training (e.g., Blume, Ford, Baldwin & Huang, 2010). Hence, the term 'training transfer' includes, and refers to, two processes or stages (generalisation and maintenance) which are in succession. However, studies are not always clear about their use of terminology or which stage of training transfer they are referring to. Baldwin and Ford (1988) argued that examining training transfer requires clarification of what is meant by 'transfer'. Despite Baldwin and Ford's caution, research has not considered adequately how these different stages of training transfer (generalisation and maintenance) are operationalised. For example, Pisanu, Fraccaroli and Gentile (2014) in their stepped model of training transfer discuss maintenance at step 4, before transfer at step 5. It is unclear if they are referring to transfer generalisation at Step 5 (which is usually defined as occurring prior to maintenance of skills) or the construct of training transfer overall.

Operationalisation and measurement of training transfer has been done in various ways that are problematical. Some researchers have pointed out inconsistent operationalisations of training transfer; for example, criticism of the timing of transfer measurement after training (e.g., Taylor, Russ-Eft & Taylor, 2009; Franke & Felfe, 2012). Cross-sectional research methodologies of training transfer often take a "snapshot" of transfer by measuring it at diverse times after training and labeling all of the 'snapshots' as transfer. Others have suggested strategies to improve measurement such as short-term and long-term measurement of transfer (Gaudine & Saks, 2004; Franke & Felfe, 2012). However, generally, training transfer research examines immediate

transfer, rather than examining it over longer time-frames (Axtell *et al.*, 1997). Immediately after training has been considered the critical period for transfer to occur (Axtell *et al.*, 1997). Yet this focus on immediate transfer may underestimate the time required for competency in complex skills to be achieved. Also, Ford, Baldwin, and Prasad (2018) point out in their review of training transfer research that more attention should be paid to measuring transfer over multiple time frames as trainees attempt to transfer skills.

Research on training transfer seldom takes skill complexity or competence into account when examining application of new skills to the workplace, or the maintenance of skill competence over time. The transfer process likely has different levels of traction due to varying levels of motivation, effort, interest, experience, skill and opportunity, or exposure to differing organisational transfer climates. These factors will likely emphasise different opportunities or influences on the generalisation and/or maintenance of different skills within a skill-set due to organisational factors such as relevancy, management and peer/team support, and opportunity and time to practice and apply what has been learnt. Hence, the transfer generalisation and maintenance of different skills within a complex skill-set may occur at different rates as they are being practiced and applied in the workplace; with some skills applied and competence reached more quickly than others. Yet, the differences between transfer generalisation and maintenance are infrequently articulated or examined. For example, no studies were found that explored or measured transfer generalisation and maintenance concurrently (in the same study).

Gist, Stevens and Bavetta (1991) asserted that more studies were needed to examine transfer generalisation and maintenance processes, as "they appear to differ" (p. 858). However, there appears to be inadequate examination of these differences since that time, with Blume *et al.* claiming in 2010 that more studies were still needed. In addition, few studies to date have

collected multiple sequential measures of transfer over time from the same trainees (Blume *et al.*, 2010) or examined potential differences in influential factors, making any conclusion about transfer generalisation or maintenance difficult.

Maintenance of skills may begin at different times after training depending on when skill competence has been achieved. Maintenance involves skill retention (Kontoghiorghes, 2014). This implies maintenance of skill competency by its effective application in practice. Hence, it is important to distinguish between understanding and retaining knowledge, and the ability to apply the knowledge appropriately and competently in the workplace on an ongoing basis. There is little research that examines the maintenance of trained skills over time in any depth (Axtell *et al.*, 1997). Though follow-up measurement has occurred up to one year post-training (e.g., Axtell *et al.*, 1997; Govaerts *et al.*, 2017), this is the exception rather than the rule.

In order to understand how skills are utilised and retained over time, it is important to understand which factors may influence retention and/or cause skill decay (Kontoghiorghes, 2014). However, there is little research that examines the factors that support or influence maintenance (Axtell *et al.*, 1997). Identifying problematic factors causing decline in skill competency may assist with recognition of organisational transfer climate issues (Kontoghiorghes, 2014). For example, whether lack of skill retention is due to individual factors such as motivation or self-efficacy or whether skill decline is across organisational departments and due to issues concerning the work climate (Kontoghiorghes, 2014). Issues in the work environment may include lack of manager support or organisational processes that encourages KSA application. Thus, better understanding of the factors that influence ongoing skill maintenance may assist organisations to address those issues.

Overall, training transfer studies appears to have operationalised training transfer predominantly as a single-staged process, neglected transfer maintenance, and ignored the possibility of examining generalisation and maintenance concurrently. Ford *et al.* (2011) have suggested that with respect to training transfer, there is unlikely to be one clear characterisation of successful transfer across all types of skills, training programs, trainees, workplaces, job categories and tasks. They suggest researchers need to be more precise regarding definitions and measurement of transfer so that results can be compared. That is, transfer research needs to ask the following questions:

1. *What is being measured at this particular time: transfer generalisation of a learnt skill to the workplace or the maintenance of a skill after competency has been achieved and successfully applied?* and
2. *May transfer generalisation and maintenance be occurring concurrently for different skills within a complex skill-set?*

Investigating transfer generalisation and transfer maintenance as two stages of the training transfer process, with potentially different influencing factors, will benefit transfer theory development. Consequently, it will benefit organisations by potentially increasing return of investment of work-related training expenditure. Hence, it is important to examine both transfer generalisation and maintenance as they may potentially occur simultaneously for different skills within a complex skill-set, such as those of conflict resolution and leadership. This clarification of the operationalisation of transfer generalisation and maintenance is a current knowledge gap that needs to be explored further.

1.7 Type and complexity of skills

The second potential reason for inconsistencies in training transfer research may be due to the different types of skills being studied. Research on training transfer is complicated by the fact that not all training is the same, making comparisons between different studies problematic (Laker & Powell, 2011). This is especially so with skills that are more difficult to quantify or observe in a workplace setting such as cognition or decision-making (Ford *et al.*, 2011).

Skills have been classified in different ways in the literature. For example, Franke and Felfe (2012) describe "closed" and "open" skills. Closed skills refer to those that can be reproduced in the workplace context exactly as how they were taught (e.g., computer skills). Open skills are guided by principles and theories which the individual must adapt to their specific context (e.g., conflict management and communication) (Franke & Felfe, 2012).

Transfer has also been categorised into near and far transfer (Holladay & Quinones, 2003). Near transfer denotes the stimulus in the transfer condition as being similar to the stimulus in the original learning condition (Holladay & Quinones, 2003). For example, near transfer more likely occurs with closed skills. Far transfer refers to a stimulus in the transfer condition which is to some degree different from the stimulus in the original learning condition (Holladay & Quinones, 2003). Far transfer is more likely to occur with open skills, though not exclusively. Near transfer has been shown to occur more readily than far transfer (Holladay & Quinones, 2003; Kim & Lee, 2001). According to Kim and Lee (2001), procedural step-by-step types of training skills or tasks tend to encompass near transfer; whereas declarative training objectives which comprise theories, concepts and principles more likely require far transfer. Skills (both content and outcome) that can be reproduced in the workplace as they were taught in training are

more likely to transfer than skills that are different or more difficult to reproduce in the workplace as trained (Kim & Lee, 2001).

Skills have also been differentiated as either 'hard" or "soft" skills (Laker & Powell, 2011). Soft-skills include inter-personal skills (ability to manage interactions with others such as conflict management and leadership) and intra-personal skills (ability to manage and regulate self, such as emotional intelligence) (Laker & Powell, 2011). Hard-skills tend to be considered more objective, technical or task-oriented. They include skills associated with mathematics, typing, accounting, finance, or working with equipment, data, or software (e.g., computer programming) (Laker & Powell, 2011). These terms, hard and soft skills, are used commonly in healthcare professional research, and are utilised in later chapters of this thesis.

Laker and Powell (2011) contend that making no differentiation between hard and soft skills in relation to training transfer disguises significant differences between these two types of skills. Further, Laker and Powell (2011) contend that soft-skills training is less likely to transfer to the workplace than hard-skills training. As such, soft skills require far transfer as opposed to near transfer. This is most likely due to the cognitive complexity of learning interpersonal skills and also in applying them appropriately to the work context. In addition, there is often an emotional component when utilising interpersonal skills such as communication or conflict resolution (Gist *et al.,* 1991).

Franke and Felfe (2012) point out that interpersonal skills are more difficult to learn and therefore transfer to the work context, as they require higher cognitive effort for abstract reasoning and reflection as well as a supportive work-context. Note, however, that minimal research was found that specifically investigated the maintenance of interpersonal skills. Moreover, interpersonal skills and associated behaviours are not readily quantifiable for

measurement or easy to monitor at work, especially those that focus on cognitive outcomes such as reasoning or decision-making (Burke & Hutchins, 2008) which are required for competent conflict resolution and leadership.

As Ford *et al.* (2011) point out, estimates of training transfer, whether generalisation or maintenance, imply an inherently easy to observe and measurable phenomenon that can be reduced to something specific such as a precise percentage. However, depending on the type of training, it is a difficult and expensive process to measure transfer in a reasonable, rigorous and valid way that produces a meaningful account about what transfer is and how it occurs (Barnett & Ceci, 2002; Ford & Schmidt, 2000; Ford *et al.*, 2011). For example, the application of knowledge and skills that are hard to observe or measure, such as mental processes involved in decision making and adaptive skills relating to interpersonal skills, need to be measured indirectly via observation of changes in behaviours and/or reports of changes, and perceptions thereof, by the individual, their manager or their team (Ford *et al.*, 2011). Indirect measurement can be problematic in regards to research methodological rigor or, from a practical point of view, how to measure precisely the variable of interest. These difficulties with applied research design mean that the more difficult to measure phenomena are less likely to be studied.

Ford, Smith, Weissbein, Gully and Salas (1998) state that training designers often rely on Thorndike's (1901) theory of identical elements as a guide to maximise skill transfer. Hence, training is designed to replicate how tasks are conducted in the workplace to increase the likelihood of transfer (Bransford & Schwartz, 1999). This training design feature is more difficult to utilise in teaching soft skills such as conflict resolution and leadership due to the numerous contextual possibilities of when, how and why to apply them. As Ford *et al.,* (1998) point out, though breaking complex skills into simple steps or components and devising strategies to deal

with each of these is possible, integrating all the components to become competent is much more difficult. Ford *et al.*, (1998) also point out that little research has focused on examining effective learning strategies for training transfer of cognitively complex, dynamic tasks such as effective leadership and managing conflict.

Another theory that assists in understanding why soft skills may be more difficult to transfer than other types of skills is what has been termed low and high road transfer. Low road transfer refers to the transfer of skills where the conditions under which the skills are taught are very similar to the conditions in which they will be utilised, such as the work environment (Perkins & Salomon, 1992). Perkins and Salomon (1992) state that low road transfer activates well-practiced routines as the transfer context (e.g., work) is sufficiently similar to the learning context, thereby triggering well-developed semi-automatic responses. Examples of teaching for low road transfer include simulations which mimic their real-life counterparts, such as the use of practice dummies in cardiopulmonary resuscitation in first-aid courses and the use of driving simulators in drivers' education courses (McAdoo & Manwaring, 2009). Low road transfer teaching techniques are particularly appropriate for distinct behaviourial learning goals such as technical skills and less suited to cognitive, conceptual learning goals involved in soft skills (McAdoo & Manwaring, 2009).

High-road transfer refers to the transfer of skills which require deliberate, effortful abstraction and a search for connections to be utilised in new or unfamiliar contexts due to their complexity (Perkins & Salomon, 1992). High road transfer requires time and effort to explore principles and reasons why, when and how particular actions or behaviours should be undertaken (Perkins & Salomon, 1992). Due to the numerous variables and considerations involved, it is

difficult to replicate the complexity of real situations in learning conditions (Perkins & Salomon, 1992). The transfer of interpersonal skills requires high road transfer.

Furthermore, complex interpersonal skills such as conflict resolution and leadership require analogical reasoning. Analogical reasoning is the use of an analogy or story of one situation to assist with solving another different problem or issue (Bransford & Schwartz, 1999). McAdoo and Manwaring (2009) state that analogical reasoning is effective for supporting the high road transfer required for such skills. However, research on analogical transfer found many instances of failure to transfer spontaneously from one problem to the next (Bransford & Schwartz, 1999). Analogical reasoning is often required for the transfer of interpersonal skills; making them more difficult and therefore less likely to transfer from training to the workplace (Bransford & Schwartz, 1999) than hard skills, which are more likely to require low road transfer.

In terms of this differentiation between types of skill training, there appears to be a higher proportion of research into the training transfer of 'hard' or technical skills than 'soft' or intra/inter-personal skills involved in conflict resolution or leadership. For example, there is minimal research into the transfer of conflict resolution training (Gitonga, 2007; Zweibel *et al.*, 2008). There has been comparatively more research on the transfer of leadership training (e.g., Krishnamani & Haider, 2016); Snoek & Volman, 2014; Sørensen, 2017) than conflict resolution skills, yet not many overall (Gilpin-Jackson & Bushe, 2007). In addition, there was low to moderate overall effectiveness of leadership training found in the meta-analytic reviews by Burke and Day (1986), Collins and Holton (2004), and Powell and Yalcin (2010), with great variation.

In summary, estimates are typically low or variable regarding the ability of trainees to transfer new KSA from training to their workplace (e.g., Avolio *et al.*, 2010; Baldwin *et al.*,

2011; Burke & Hutchins, 2008; Cheng & Hampson, 2008; Collins & Holton, 2004; Gegenfurtner, Veermans, Festner & Gruber, 2009b), thus labeled the 'transfer problem'. Two issues important to address are firstly, how transfer generalisation and maintenance have been operationalised and when they are measured in relation to each other. Secondly, the lack of differentiation between types and complexity of skills studied, namely soft and hard skills. This is especially important considering that the type and complexity of the skill impacts the likelihood of it being generalised to, and maintained, in the workplace.

This thesis suggests that transfer generalisation and maintenance may potentially occur simultaneously for different skills within complex skill-sets such as conflict resolution and leadership. Furthermore, differentiating skills into either hard (e.g., accountancy or computer programming skills) or soft skills (e.g., interpersonal skills like conflict resolution) will allow comparison of similar findings within a category of skill type to occur.

In light of these issues and the limited literature regarding the transfer generalisation and maintenance of conflict resolution and leadership skills, it is important to examine which factors may influence their transfer (generalisation and maintenance). Factors may differ from those that influence the transfer of hard skills. They may also differ in their influence of the two phases, generalisation and maintenance. In the following section, research will be explored in relation to how individual and organisational factors influence the transfer generalisation and maintenance of work-related skills generally; and then more specifically, regarding their influence on conflict resolution and leadership skill transfer.

1.8 Influencing factors of training transfer - Individual

Existing transfer research generally falls within one of three broad categories of influencing factors: individual, training, and work environment/context (Baldwin & Ford, 1988; Burke & Hutchins, 2007). Several authors highlight inconsistent and conflicting findings concerning these different factors (Blume *et al.,* 2010, Burke & Hutchins, 2007; Cheng & Hampson, 2008). For example, in relation to individual factors, Burke and Hutchins (2007) point out the mixed support for conscientiousness and other Big Five personality variables with minimal or no empirical evidence supporting their relationship with transfer. Though there has been inconsistent results in regards to some individual factors such as personality (e.g., extroversion, consciousness, openness to experience; Burke & Hutchins, 2007), several individual factors have been found repeatedly to influence the transfer of skills to the workplace. These include self-efficacy, motivation and organisational commitment. Recently, individuals' intentions regarding the transference of skills (*i.e.,* transfer implementation intentions) has also found support.

The following section reviews available research on the influence of these particular individual factors (*i.e.,* self-efficacy, intrinsic motivation, motivation-to-learn, motivation-to-transfer, organisational commitment and transfer implementation intentions) on training transfer (generalisation and maintenance) in general. It then reviews research specific to conflict resolution and managerial leadership skills.

This section will also consider research regarding one individual factor that has not been previously examined in relation to training transfer: emotional intelligence. As conflict resolution and leadership skills have been found to be associated with emotional intelligence (Rajah, Song, & Arvey, 2011; Scott-Ladd & Chan, 2004; Zaccaro, Green, Dubrow & Kolze, 2018), this thesis

will investigate the hypothesis that higher emotional intelligence is required for employees to transfer and maintain interpersonal skills effectively.

Self-efficacy

Self-efficacy is generally defined as a person's self-expectation or confidence in performing a specific task (Bandura, 1986); or self-judgments regarding competency to perform particular tasks (Burke & Hutchins, 2007). Self-efficacy has been studied along three dimensions as follows:

- level: individuals may differ in the level of task difficulty they believe they are capable of performing;
- strength: individuals may differ in their confidence in attaining a given level of performance; and
- generality: efficacy beliefs associated with one activity may generalise to similar ones within the same activity domain or across a range of activities (Holladay & Quinones, 2003).

Self-efficacy generality is further classified into specific, intermediate or global/general tasks. Specific tasks are all similar to each other, intermediate tasks are different but are within the same domain, and global/general tasks are different and span across various domains (Holladay & Quinones, 2003). Research has examined intermediate generality, and confirm that self-efficacy beliefs for a particular domain of performances are related (e.g., leadership self-efficacy) (Holladay & Quinones, 2003).

A positive relationship between self-efficacy and performance have been reported consistently in research findings (Blume *et al.* 2010; Ford *et al.*, 2018). For example, Gist *et al.*

(1991) found that even when controlling for ability, self-efficacy accounts for a significant portion of the variance in regards to performance. Gist *et al.* (1991) also highlight research that links self-efficacy to long-term relapse prevention in performance; for example, among smokers, alcoholics and heroin addicts; as well as employees with chronic absenteeism. Furthermore, employees with high self-efficacy out-perform those with low self-efficacy (Gist *et al.*, 1991).

Self-efficacy has been studied widely in the past two decades in relation to training transfer (Salas & Cannon-Bowers, 2001). Many studies have found that self-efficacy is related to successful transfer of new skills to the workplace post-training (e.g., Burke & Hutchins, 2007; Chiaburu & Marinova, 2005; Chiaburu *et al.*, 2010; Holladay & Quinones, 2003; Machin & Fogarty, 1997; Machin & Fogarty, 2003; Salas & Cannon-Bowers, 2001; Schwoerer, May, Hollensbe & Mencl, 2005). Training transfer studies have also reported that self-efficacy is associated with other individual factors, such as motivation-to-learn, motivation-to-transfer and transfer implementation intentions (Colquitt, LePine & Noe, 2000; Gegenfurtner *et al.*, 2009b; Machin & Fogarty, 2003) and positive organisational transfer climate factors, such as manager and peer support (Chiaburu *et al.*, 2010). Findings have been consistent regardless of whether self-belief was present before the training or as a result of the training (Burke & Hutchins, 2007; Salas & Cannon-Bowers, 2001).

Holladay and Quinones (2003) point out that a number of studies have found a positive relationship between self-efficacy, training performance and near transfer. They found self-efficacy intensity (level and strength) and generality were also positively related to far transfer performance; and that self-efficacy generality mediated the relationship between practice variability and far transfer. However, far transfer performance was assessed in relation to the

performance of closed skills (*i.e.*, simulation) which is less applicable to the transference of interpersonal skills.

As mentioned, self-efficacy has also been conceptualised as a general belief in one's ability to succeed. In the work context, general self-efficacy (GSE) is the self-belief in being able to complete work-role requirements successfully and perform across a variety of different situations (Chen, Gully & Eden, 2001; Schwoerer *et al.,* 2005). GSE is a relatively stable, trait-like, generalised competence characteristic (Gist *et al.* 1991; Schwoerer *et al.,* 2005). It is believed to impact a person's motivation to achieve skill mastery by influencing their perseverance in addressing and overcoming barriers (Petridou, Nicolaidou & Karagiorgi, 2017). Some researchers have found GSE is related to successful transfer of skills to the workplace (e.g., Chen *et al.,* 2004; Chiaburu & Marinova, 2005; Dierdorff, Surface & Brown, 2010).

Chen, Gully, and Eden (2004) compared GSE to self-esteem, and found that they were empirically and conceptually two distinct constructs. Though highly correlated, they state that GSE was related to work-related effort, performance and achievement; whereas self-esteem was more likely related to affective states such as job satisfaction or strain. Chen *et al.*, (2004) point out that employees high in GSE will likely be more effective at work that requires sustained effort in the face of occasional setbacks due to being more motivated and persistent.

In relation to the transfer of soft-skills, there has been some research regarding self-efficacy and interpersonal skills such as negotiation (e.g., Gist *et al.*, 1991) but there have been no studies that specifically examined self-efficacy and the transfer of conflict resolution skills. However, Zweibel *et al.* (2008) in a qualitative study reported that some of their participants who attended conflict resolution workshops reported greater self-confidence to deal with conflict

situations both immediately after training and 12 months later. This suggests a possible increase in self-efficacy to utilise newly acquired conflict resolution skills in their healthcare workplace.

A few studies were found on self-efficacy and leadership/management skills. Baron and Morin (2010) study regarding executive coaching of managers found that self-efficacy increased with the more coaching sessions managers completed. Gist *et al.* (1991), in a study regarding self-efficacy and the maintenance of negotiating skills, found that self-efficacy was correlated with salary negotiation performance; and contributed significantly to skill maintenance, demonstrated by improved negotiation performance seven weeks post-training. However, their operationalisation of maintenance may also have been defined as transfer generalisation of negotiation skills, rather than skill maintenance. Their two studies involved near and far transfer of two negotiation courses after which participants completed the negotiation tasks, with seven weeks between tasks. Hence the assessment of skill maintenance was based on the repetition of the similar/different tasks and the time-frame of seven weeks post-training between tasks, rather than competence in the task being maintained *per se*. It could be argued that the participants were generalising the new negotiating skills (*i.e.*, becoming competent) and improved their performance in the seven weeks.

Also Blume *et al.* (2010), in a meta-analytic study examining a sub-set of open skills studies related to interpersonal/leadership skills training, found that post-training self-efficacy, motivation, work environmental factors, post-training knowledge and pre-training self-efficacy all had similar correlations with training transfer (*i.e.*, .22, .20, .20, .16, and .14 respectively). They also found that in regards to pre- and post-training self-efficacy, the relationship with transfer was higher for open skills than for closed skills. In contrast, Axtell *et al.* (1997) in a study regarding self-efficacy, motivation-to-transfer, autonomy, relevancy and manager's support

in relation to the transfer (one month post-training) and maintenance (12 months post-training) of interpersonal skills to the workplace (e.g., assertive behaviour, appropriate use of questioning techniques and effective problem-solving skills in teams) found that self-efficacy was not correlated with transfer or maintenance. They found that relevance of the training and motivation-to-transfer were associated with transfer at three months post-training; and that motivation-to-transfer, autonomy and previous perceived transfer were associated with maintenance 12 months post-training. Hence, they suggested that these factors were more important than self-efficacy in overcoming obstacles to transfer.

It has been suggested that other factors may be more important than self-efficacy for transfer to occur when the skills are complex, such as with interpersonal skills. For example, Grossman and Salas (2011) point out in their review that self-efficacy may be conditionally related to training transfer, citing the meta-analytic findings of Judge Erez, Bono & Thoresen (2003). Judge *et al.* found that self-efficacy predicted performance in work-tasks of low complexity but not those of medium or high complexity. Gist *et al.* (1991) report that the ability to perform well on both cognitive and interpersonal tasks simultaneously requires an ability to summon and sustain intellectual resources in addition to coping emotionally with unpredictable, interdependent events. They suggest that individuals with low self-efficacy experience significantly more anger, frustration and anxiety than high self-efficacy individuals. Gist *et al.* (1991) conversely posit that self-efficacy is likely an important contributing factor regarding performance on certain complex interpersonal tasks as it has been shown to influence coping and perseverance in the face of difficulties.

Complex interpersonal interactions, which are typical of conflict situations and most leadership communications or situations, often are associated with high emotional demand and

coping (Gist *et al.*, 1991). Leadership skills, in particular, are complex and need to be called upon in a range of differing situations or conditions, such as with different personalities, needs and interests or organisational culture and climates with different levels of power or team cohesion. All of which require high levels of competency to manage. Hence the influence of self-efficacy on the transfer and maintenance of conflict resolution and leadership skills needs to be examined further in light of these differing findings.

Motivation

There is strong evidence in existing research demonstrating the influencing effects of motivation on the transfer of KSA from training to the workplace (e.g., Burke & Hutchins, 2007; Gegenfurtner & Vauras, 2012; Sankey & Machin, 2014), with different types of motivation influencing the training transfer process at different times (e.g., pre-training compared to post-training). Noe and Schmitt (1986) theorised that motivation-to-transfer differed to motivation-to-learn, and was required after training for participants to make effortful actions to transfer the new skills learnt to their workplace. Sankey and Machin (2014) added that there were different types of motivation necessary for workplace training, as employees participating in non-mandatory workplace training required intrinsic motivation to attend such training. This section explores the research in relation to these three types of motivation; namely, intrinsic motivation, motivation-to-learn and motivation-to-transfer.

Intrinsic Motivation

Deci and Ryan (2012) define autonomous motivation as behaving with a sense of willingness, volition and congruence or with full endorsement in the behaviour one is engaged in. Autonomous motivation is comprised of intrinsic and extrinsic motivation (Deci & Ryan, 2012).

Intrinsic motivation involves “inherently satisfying internal conditions that occur when doing an intrinsically motivated behaviour” (Deci & Ryan, 2012, p. 88). In contrast, extrinsic motivation involves doing an activity because it leads to another separate consequence such as a reward or accolades; or avoidance of a punishment or threat. Extrinsic motivation often involves the feeling of being controlled, in that there is a degree of pressure or coercion to do a task (Deci & Ryan, 2012).

When people are intrinsically motivated, their learning tends to be deeper and more conceptual, and they tend to remember it longer in comparison to being extrinsically motivated by rewards or recognition (Deci & Ryan, 2012). For example, engaging in learning behaviors with an intrinsic goal such as personal growth, can result in more learning and better performance outcomes than learning with an extrinsic goal, such as the promise of higher wages (Vansteenkiste *et al.*, 2004). Furthermore, people feel more intrinsic motivation with positive feedback on successful performance (Gagné & Deci, 2005). Conversely, negative feedback undermines both intrinsic and extrinsic motivation as perceived competence decreases (Gagné & Deci, 2005).

Intrinsic motivation is based on self-determination theory (SDT) which maintains that humans require three basic psychological needs to be met for healthy lifespan development (Deci & Ryan, 2012). These needs are competence, autonomy and relatedness. That is, individuals need to feel competent in negotiating their external and internal environments; to feel autonomy or self-determination with respect to their own behaviours and lives; and lastly, to experience relatedness to other people or groups (Deci & Ryan, 2012). The feelings driving motivation are experienced directly as interest and enjoyment, and derived primarily from experiences that

satisfy the needs of competence and autonomy, as well as relatedness in some cases (Deci & Ryan, 2012).

According to SDT, people move instinctively towards a state of autonomy in healthy human development as they have a capacity for, and desire to experience self-regulation and integrity (Deci & Ryan, 2012). Therefore, intrinsic motivation will be increased by events or situations that satisfy a need for autonomy, but will be decreased by those that thwart need satisfaction (Deci, Koestner & Ryan, 1999). Understanding whether people's motivation is more autonomous or more controlled is important for making predictions about people's engagement (Deci & Ryan, 2012), such as in training.

Deci *et al.* (1999) in a meta-analysis of 128 studies examined the effects of extrinsic rewards on intrinsic motivation and found that rewards such as performance-contingent rewards, undermined intrinsic motivation; whereas positive feedback enhanced both free-choice behaviour and self-reported interest. The authors state that previous research found tangible rewards, for example money, could undermine intrinsic motivation for an interesting activity like training. However, Gagné and Deci (2005) point out that many work-related activities or tasks, including training, may not be intrinsically interesting to employees and hence they question the use of strategies such as participation and empowerment to enhance intrinsic motivation.

A recent meta-analysis by Wouters, van Nimwegen, van Oostendorp and van der Spek (2013) on computer games for the purpose of learning and instruction, found that learning via these games was not more intrinsically motivating or engaging than other learning-instructional methods. They posited that, from a SDT perspective, this may be due to the lack of autonomy and control which may undermine intrinsic motivation.

In relation to intrinsic motivation and the transfer of KSA from training to the workplace, some studies found intrinsic motivation related positively to training transfer. For example, autonomous and intrinsic motivation were found to have a positive influence on employees' intentions to transfer new skills to the workplace as they were valued as intrinsically interesting and important (Gegenfurtner, Vauras, Gruber & Festner, 2010; Sankey & Machin, 2014). Sankey and Machin (2014) suggest that the intrinsic benefit of learning creates commitment to implementing strategies to transfer new skills.

Training that increases the self-efficacy and intrinsic motivation of trainees is likely to have better outcomes. This is because more confident and intrinsically motivated employees tend to be higher performers and exert more effort (Avolio *et al,* 2010). Consequently, it makes sense that the level of motivation associated with participating in training is reported to be a significant predictor of the transfer of knowledge and performance, even after controlling for general intelligence (Avolio *et al,* 2010; Colquitt *et al.,* 2000). Further, Gegenfurtner, Festner, Gallenberger, Lehtinen and Gruber (2009a) found that trainees' attitudes towards training content had a moderate effect on autonomous motivation.

SDT can help explain the influence of factors such as organisational transfer climate, and how these relate to transfer and an individual's motivation. SDT can help to predict how various embedded contexts and varying levels of autonomy versus control may change between circumstances. In an organisational context, employees may simultaneously feel autonomous and controlled due to the interpersonal proximal and distal contexts at play within their organisation (Deci & Ryan, 2012). For example, managers and teams create the interpersonal autonomy climate that affects the motivation of individual team-members on a daily basis. Yet the team is embedded within a department and the organisation where key personnel, such as senior

managers, create broader climates which affect the motivation, goals and behaviours of other staff (Deci & Ryan, 2012). These distal contexts, including global competitive markets that the organisation competes in, may have coercive influences on teams' objectives and therefore autonomy, engagement and satisfaction at the bottom of the chain of embedded contexts (Deci & Ryan, 2012), affecting employee motivation. The result can produce varying motivations which may potentially conflict, resulting in ambiguous motivations and efforts to transfer KSA to the workplace (Gegenfurtner *et al.*, 2010; Sankey & Machin, 2014).

In regards to interpersonal skills, there was limited research regarding intrinsic motivation and the transfer of conflict resolution or leadership skills. One study on communication skills by Vansteenkiste, Simons, Lens, Sheldon and Deci (2004) examined how autonomy (e.g., choice) or control (e.g., pressure) influenced autonomous motivation related to intrinsic (e.g., personal growth) or extrinsic goal-framing (e.g., financial goals) of college Business students. They found that conceptual learning was greater when it involved intrinsic goals with a supportive autonomous learning climate. As Vansteenkiste *et al.* (2004) suggest, people are more likely to engage in learning and be motivated by intrinsic learning goals when they feel able to decide for themselves, free of control or coercion.

Another regarding leadership was that of Deci, Connell and Ryan (1989) who evaluated the impact of a managers' training intervention and how employees' perceptions and trust in their managers and organisation changed over time. Managers attended training over a two to three month period and learned how to support employees' autonomy by acknowledging staff perspectives, behaving in non-controlling ways, offering choice, encouraging self-initiation and avoiding pressuring staff to behave in particular ways. The researchers reported that employees

were more satisfied with their jobs, including having a higher level of trust in corporate management, and displaying other positive work-related attitudes.

Although there is research on intrinsic motivational effects on learning and training transfer, no research was found that examined intrinsic motivation in relation to the transfer of conflict resolution or leadership KSA directly. In light of this significant gap, the influence of intrinsic motivation on the generalisation and maintenance of conflict resolution and leadership skills needs to be examined further.

Motivation-to-learn

Motivation-to-learn is defined as a desire to learn, and denotes the intensity and persistence of effort that people attending training may apply before, during or after training (Burke & Hutchins, 2007). It is derived from the learner's perception that the training subject or focus is relevant and immediately applicable to his/her current practice or work (Dettlaff and Dietz, 2004).

Motivation-to-learn new knowledge and skills is an important precursor to learning, even before training begins, and affects the trainee's level of engagement (Gegenfurtner & Vauras, 2012). For example, Gegenfurtner and Vauras (2012) found it to be significantly positively associated with intrinsic motivation. They highlight that people who are highly interested in the training content are more likely to be motivated-to-learn, with interest underlying the ability to transfer new KSA.

In their meta-analysis, Colquitt *et al.* (2000) found that motivation-to-learn was consistently positively correlated with declarative knowledge, skill acquisition, and transfer of learning and post-training job performance. Many studies, including meta-analyses, reiterate the

positive relationship between motivation-to-learn and the transfer of skills to the workplace (e.g., Burke & Hutchins, 2007; Chiaburu & Marinova, 2005; Colquitt *et al.,* 2000; Gegenfurtner, 2011; Gegenfurtner & Vauras, 2012; Gegenfurtner *et al.,* 2009b; Salas & Cannon-Bowers, 2001; van der Locht *et al.,* 2013).

Motivation-to-learn has also been associated with other factors that influence or mediate transfer, such as motivation-to-transfer, commitment, performance self-efficacy, intrinsic motivation, supervisor and/or peer support, and training design (Gegenfurtner *et al.,* 2009a; Kontoghiorghes, 2002; Machin & Treloar, 2004). Gegenfurtner and Vauras (2012) completed a meta-analysis of age-related differences in relation to 25 years of training research of motivation-to-learn and training transfer. They found that, rather than being unable to "teach an old dog new tricks" (p. 33), motivation-to-learn and transfer did not decline over the trajectory of a working life, but remained at a high level or increased with age.

Motivation-to-learn is one of the most commonly mentioned and researched motivational constructs, together with intrinsic motivation and motivation-to-transfer (Wen & Lin, 2014). Reviews and meta-analyses such as those of Colquitt *et al.* (2000), Franke and Felfe (2012), Gegenfurtner (2011) and Gegenfurtner *et al.* (2009b) confirm its importance in relation to training outcomes and the transfer of KSA to the workplace (Klein, Noe, & Wang, 2006).

However, few studies have examined motivation-to-learn as an influencing factor in the context of interpersonal skills. No studies were found that examined motivation and the transference of conflict resolution KSA.

Comparatively, more studies have been conducted which examined motivation-to-learn and the transference of leadership training. Studies by van der Locht *et al.,* (2013) and Franke and Felfe (2012) found motivation-to-learn associated with the transfer of leadership and/or

managerial skills and other factors, such as motivation-to-transfer, expected utility and organisational transfer climate. Baldwin *et al.* (2011) emphasise the importance of motivation-to-learn in relation to leadership skills, in that individuals may know and understand effective management principles but may not have the motivation or ability to put them into action. As Conger (2013) suggests, unsupportive organisational systems and approaches can stifle motivation and consequently, efforts to transfer and maintain skills in the workplace.

Though its importance has been well established with other types of skills, it is important to better understand how motivation-to-learn may either undermine or benefit efforts to transfer interpersonal skills. This gap in research should be investigated.

Motivation-to-transfer

Motivation-to-transfer was introduced by Noe and Schmitt (1986) as an important factor in relation to the transfer of training KSA (Gegenfurtner *et al.*, 2009b). Noe and Schmitt (1986) define motivation-to-transfer as the trainee's desire to use knowledge and skills mastered in a training program in their workplace. According to Noe and Schmitt (1986), behaviour change is more likely when participants are motivated to transfer new skills to the workplace, feel confident about using the skills, and perceive that job-performance improvements will help solve work-related problems and job demands as a result of using the new skills.

Motivation-to-transfer (also termed transfer motivation) has consistently been found to be essential for training transfer to occur (Gegenfurtner *et al.*, 2009b; Gegenfurtner, 2011; Krishnamani & Haider, 2016). Massenberg, Schulte and Kauffeld (2017) point out that it is a key factor for training transfer because trainees with low motivation-to-transfer are unlikely to choose to apply or put effort into applying new skills at work.

Motivation-to-transfer has been found to:

- be associated with, or mediate the effects of, other training transfer factors, including motivation-to-learn, self-efficacy, positive affect, declarative knowledge and organisational factors such as supervisor support and opportunity to use skills (Awais Bhatti, Ali, Isa, Faizal & Mohamed Battour, 2014; Colquitt *et al.*, 2000; Egan, 2008; Gegenfurtner, 2011; Gegenfurtner *et al.*, 2009b);Kontoghiorghes, 2002; Paulsen & Kauffeld, 2017; Machin & Fogarty, 1997; Machin & Fogarty, 2004; Massenberg *et al.*, 2017);
- be associated longitudinally with transfer post-training (Axtell *et al.*, 1997); and
- significant in studies from diverse cultures such as Germany (Gegenfurtner *et al.*, 2009b; Paulsen & Kauffeld, 2017; Massenberg *et al.*, 2017) and Taiwan (Wen & Lin, 2014a; Wen & Lin, 2014b).

As with motivation-to-learn, there are few studies examining the relationship between motivation-to-transfer and the transfer of interpersonal skills to the workplace, such as conflict resolution. Axtell *et al.* (1997) examined the transference of interpersonal skills one month and one year after trainees attended a training program. They found that motivation-to-transfer was key in determining the level of transfer trainees perceived they had achieved after one month. Trainees' reported motivation-to-transfer and perceptions of transfer (level of) at one month predicted their reported level of transfer 12 months post-training, together with the degree of autonomy in their job (Axtell *et al.*, 1997). Interestingly, the key predictors of transfer after one year were slightly different from those reported one month post-training (Axtell *et al.*, 1997), perhaps confirming that they were assessing maintenance rather than transfer generalisation at that time.

Paulsen & Kauffeld (2017) found that positive affect was positively related to motivation-to-transfer before and after a three-day soft-skills training to German University students; training transfer itself was not measured. The soft skills training in their study included presentation skills, communication, teamwork, and conflict management.

In regards to the transfer of skills from leadership training, Gilpin-Jackson and Bushe (2007) found that participants' motivation-to-transfer increased with physical working proximity to other people who had attended the same leadership training. Franke and Felfe (2012) found that motivation-to-transfer and organisational support were associated with behaviourial transfer shortly after training as well as one year later. They suggested that transfer of leadership skills is more likely when trainees are motivated to transfer the new skills and perceive support from their organisation to do so (such as being provided with opportunities and cues for transfer). These authors reported that motivation and organisational support were particularly important in the transfer of open skills.

Interestingly, in their meta-analysis of 335 leadership/management training studies, Lacerenza, Reyes, Marlow, Joseph and Salas (2017) found that although all the included training had some effect (*i.e.*, exhibited significant, nonzero effect sizes), training based on business competencies had greater effects on learning than those based on interpersonal or intrapersonal competencies. Furthermore, intrapersonal competencies showed higher effect sizes than those with interpersonal competencies (Lacerenza *et al.*, 2017). This highlights the difficulties of learning and transferring inter-/intra-personal skills.

Although some studies have established the importance of motivation-to-transfer as an influencing factor of skill transfer, questions remain in relation to the transfer of conflict resolution or leadership skills to the workplace.

Transfer Implementation intentions

Transfer implementation intention is defined as "a commitment to act in a certain way whenever certain conditions are fulfilled" (Machin & Fogarty, 2004, p225). Sankey and Machin (2014) describe these intentions as involving a plan to engage in transfer-enhancing strategies or behaviours, such as goal-setting or support-seeking, that facilitates the use of what is learnt in training when individuals return to work post-training. Machin and Fogarty (2004) explain that intentions regarding the transfer of new skills assist in highlighting to the individual aspects of the environment, often the workplace, that are relevant to the achievement of goals. Though Machin and Fogarty (2004) highlight the use of transfer-enhancement strategies such as goal-setting, self-management, relapse prevention strategies or seeking support from supervisors and peers, they assert the intention to use such strategies can be affected by factors such as the post-training organisational transfer climate. The researchers proposed that trainees develop an intention to transfer new skills as a precursor to initiating any transfer-related behaviours; and that these intentions mediate between individual factors (such as self-efficacy) and the transfer generalisation of skills to the workplace. Furthermore, they stress that transfer is unlikely to occur if trainees haven't established any intentions to transfer new skills.

Transfer implementation intentions is a relatively new construct in relation to transfer generalisation and maintenance of skills in the workplace. It developed from a related construct, implementation intentions, which has been researched in relation to goal-striving and achievement. For example, in relation to goals to change behaviours associated with diet, exercise, New Year resolutions, or alcohol consumption, as well as work-related goals, such as vocational retraining, resume and report writing, and Human Resource tasks (Gollwitzer & Sheeran, 2006), to name a few.

Gollwitzer and Sheeran (2006) in their meta-analytic review of implementation intentions on goal attainment, found that it had a positive effect on goal attainment. This finding was robust across variations in study design, outcome measurement and different goal-attainment domains. They confirmed that implementation intentions were effective in relation to:

- goal-striving initiation;
- shielding ongoing goal-pursuit from unwanted influences;
- disengagement from failing paths of action; and
- future goal-striving capability management (e.g., effective goal-striving self-regulation to avoid overextending one's capacity to pursue future goals).

These are all relevant behaviours to achieve transfer generalisation goals in the workplace.

Gollwitzer and Sheeran (2006) also found that implementation intention formation both enhanced the accessibility of specified opportunities (such as memories, recognition and attention paid to particular cues that aid goal-achievement orientated behaviours) and automated future goal-directed responses. However, they recognised that intentions are not always successfully translated into behaviour. That is, commitment to a particular goal does not inevitably prepare an individual to deal effectively with challenges faced in the work-place or with self-regulatory problems in striving towards a goal (Gollwitzer & Sheeran, 2006). Even so, the authors state that forming an implementation intention makes an important difference to whether or not people achieve their goals.

Transfer implementation intentions have been found to be associated with several individual factors related to transfer. For example, Machin and Fogarty (2003) found that transfer implementation intentions were associated with individual pre-training variables, such as self-efficacy and positive and negative affect; and individual post-training variables, such as self-

efficacy and individual transfer-enhancing activities (e.g., self-control cues, relapse prevention and goal setting). They also found that negative affect (*i.e.*, individuals dispositional tendency to feel negative emotions; Burke & Hutchins, 2007) negatively affected post-training transfer implementation intentions. They explained that affect influences work-related appraisal, attitudes and perceptions of the work environment and its transfer climate.

Further, Sankey and Machin (2014) found transfer implementation intentions related to intrinsic motivation. Stanhope, Pond and Surface (2013) found that individual's core self-evaluations (the "fundamental appraisal of one's worthiness, effectiveness, and capability as a person"; Judge *et al.*, 2003, p304) were related to post-training goal-setting and intentions to transfer.

Transfer implementation intentions is a relatively new concept in the training transfer literature, dating back to Machin and Fogarty (2003); and its importance as an influencing factor of the transfer of skills to the workplace hasn't been as well established as other previously discussed individual factors. For example, no studies were found in relation to conflict resolution or leadership skill transfer. However, as Machin and Fogarty (2004) state, transfer is unlikely to occur if intentions to implement transfer strategies and/or behaviours are not formed. Thus, its influence on the transfer and maintenance of conflict resolution and leadership skills, considering that they are skills that have been found to be more difficult to transfer, should be investigated. Also, the link to environmental factors, such as the work context, is important to explore further in relation to these two interpersonal skills, to confirm the results of other studies in this area (e.g., Machin & Fogarty, 2004; Sankey & Machin, 2014).

Organisational commitment

Organisational commitment is another individual factor that has been consistently associated with the transfer of training. Baron and Morin (2010) define organisational commitment as the level of attachment to an organisation felt by an employee of that organisation.

Organisational commitment is widely known as a multidimensional work attitude with three distinct forms: affective, continuance and normative (Allen & Meyer, 1996). Affective commitment is "an emotional attachment to, identification with, and involvement in, the organisation" by an employee (Allen & Meyer, 1990, p. 1). Continuance commitment refers to an employee's commitment based on their recognition of the costs, financial or otherwise, associated with leaving the organisation; hence the employee remains because he/she feels forced to do so (Allen & Meyer, 1996). Normative commitment refers to an employee's commitment based on a sense of obligation to the organisation (Allen & Meyer, 1996).

Mowday, Steers and Porter (1979) explain that different definitions of organisational commitment reflect various approaches to it. Some focus more on commitment-related behaviours, attitudes or emotions. An example of a commitment-related behaviour given by Mowday *et al*. (1978) is when employees behave in ways that exceed usual expectations of employees; an overt manifestation of their commitment to their organisation. Attitudinal organisational commitment is observable when employees identify strongly with the goals and ideals of the organisation, to a point where they may not be distinguishable from their own goals or values (Mowday *et al.*, 1979).

Mowday *et al.* (1979) define organisational commitment as an attitude, stating that it is the relative strength of the employee's identification with and involvement in their particular

organisation. It is characterised by a strong belief in and/or acceptance of the organisation's goals and values, and often paired with a willingness to exert considerable effort on behalf of the organisation as well as a strong desire to remain an employee (Mowday *et al.*, 1979). Mowday *et al.* (1979) suggest that it is more than just loyalty to an organisation or employer, which they see as passive. They claim that organisational commitment is an active relationship and connection, in that an employee with high organisational commitment is willing to give something of themselves in order to contribute to the organisation's well-being and future, and enjoys doing so (Mowday *et al.*, 1979; Thoresen, Kaplan, Barsky, Warren & Chermont, 2003). This thesis utilises their definition of organisational commitment, as an affective attitude.

Mowday *et al.* (1979) further assert that organisational commitment is different to job satisfaction. They suggest that organisational commitment as a construct is more global and stable and tends to develop slowly over time and is a more general affective and attitudinal response to the organisation as a whole. Job satisfaction is usually in response to only certain aspects of one's role or work-place and may change, dependent on day-to-day events or circumstances. It reflects more immediate reactions to specific aspects of the organisation and work conditions, such as pay or leadership style (Mowday *et al.*, 1979).

Organisational commitment has been studied extensively in relation to Human Resources (HR) and organisational behaviour (Baron & Morin, 2010); and has been consistently found to be important in understanding employee behaviour (Mowday *et al.*, 1979). Organisational commitment has been linked to staff turnover in that, employees who are strongly committed to their organisation are less likely to leave (Allen & Meyer, 1990). Mathieu and Zajac (1990) in their review and meta-analysis found that it was a useful criterion to measure organisational interventions designed to improve employees' attitudes and behaviours.

Organisational commitment has been studied in relation to training transfer on the premise that employees who are more committed to their organisation are more likely to perceive the training as beneficial and therefore, more likely to exert effort into transferring new KSA to their workplace (Cannon-Bowers, Salas, Tannenbaum and Mathieu, 1995). Many studies identified supported this premise. For example, Facteau, Dobbins, Russell, Ladd and Kudisch (1995) found that participants who were committed to the goals and values of their organisation reported more pre-training motivation, a precursor to transfer. Other researchers have also found organisational commitment related to motivation-to-learn and/or motivation-to-transfer, both of which have been consistently associated with training transfer (Cannon-Bowers *et al.*, 1995; Kontoghiorghes, 2002; Kontoghiorghes & Bryant, 2004; Machin & Treloar, 2004).

Baron and Morin (2010) found affective organisational commitment had a positive significant relationship with post-training self-efficacy, which predicted training transfer. Their results suggest that the more an individual feels emotionally committed to their organisation, the more he/she will put effort into developing their skills when given the opportunity to do so (Baron & Morin, 2010).

Boyce, Zaccaro and Wisecarver (2010) examined the influence of organisational commitment when undertaking leadership self-development. They defined effective leadership self-development as involving the application of skills as well as experiences that may expand one's conceptual frame of meaning which "grows requisite leadership skills" (p. 164). The researchers found that individuals with greater work orientation (measured by career motivation, job involvement and organisational commitment) and mastery orientation (which included self-efficacy, conscientiousness, the personality factor *openness to experience,* and learning goal orientation) were more motivated to perform leadership self-development.

In relation to conflict resolution, no research has examined it in relation to organisational commitment and training transfer. Furthermore, in a review of 25 years of research, there was found a relative lack of research regarding individual characteristics and the outcomes of leadership development programs (Day *et al.,* 2014). Hence, there does not appear to be any significant investigation into how organisational commitment may influence the transfer of conflict resolution or leadership KSA from training to the workplace. This highlights a significant gap in research.

Emotional Intelligence

Conflict is typified by high emotions, often negatively perceived ones such as anger, sadness and fear (Gist *et al.*, 1991). Schreier (2002) asserts that “emotions are both a cause and an escalator of conflict” (p. 99). This being so, it follows that the more "intelligently" people can be aware of and regulate their emotions, and understand and engage with the emotions of others, the more likely they will be able to effectively manage conflict. This ability to be aware of one’s own and the emotions of others, and to engage with them constructively, is conceptualised by Goleman (1999) as emotional intelligence (EI).

High EI allows people to approach conflict more effectively (Schreier, 2002). Brinkert (2010) found in his review of conflict in nursing that high EI was associated with the desirable conflict management style of collaboration, suggesting that training programs for nurses and healthcare providers should include emotional management. He recommended that conflict and communication training should include EI-related content and skills.

Lang (2009) reported that the EI of team members was an important conflict-management component of multicultural teams. He argued that conflict management training in undergraduate

business programs could help raise the EI of future managers. Schlaerth, Ensari and Christian (2013) in their meta-analysis found that employees with high EI manage conflict more constructively than employees with low EI. Kellner, Chew and Turner's (2018) integrative literature review of EI found that there was considerable research consistency regarding the importance of EI in leadership and how it positively affects leadership effectiveness across different industries and fields.

Jaeger (2003) found that EI correlated positively with academic performance and learning. It has also been identified as a primary predictor of academic success in online courses (Berenson, Boyles & Weaver, 2008). In neuroscience, emotions have been identified among the principal drivers of behaviour, underpinning decision-making and problem solving (Dugan, Weatherly, Girod, Barber & Tsue, 2014). Emotions are an important component of learning (Jaeger, 2003) and potentially also of training transfer. Effective performance on cognitive and interpersonal tasks needed for resolving conflict and demonstrating leadership depends on the ability to mobilise both intellectual and emotional-coping resources (Gist *et al.*, 1991). It therefore follows that people's ability to transfer conflict resolution or leadership skills to the workplace may also be dependent upon their level of EI. Complex interactions and interpersonal tasks require the ability to manage emotions effectively to deal with unpredictable, interdependent events which are inherent with high levels of emotional demand (Gist *et al.*, 1991).

Dearborn (2002) argues that conflict resolution training needs to incorporate EI skills to improve the transfer of conflict resolution skills. However, EI has not been researched as a factor in the transfer of conflict resolution or leadership KSA to date, despite many studies into EI and conflict resolution (e.g., Shih & Susanto, 2009), or leadership (e.g., Kellner *et al.*, 2018).

Although research links EI with effective conflict resolution and leadership skills, it has not been examined in relation to the transfer generalisation or maintenance of these skills, highlighting another significant gap in the literature.

Summary of individual factors

Several individual factors have been studied regarding their influence on the transfer of skills to the workplace. The individual factors reviewed herein were self-efficacy, motivation (including intrinsic, motivation-to-learn and motivation-to-transfer), transfer implementation intentions, organisational commitment and emotional intelligence. These individual factors have either been studied extensively but less so in relation to interpersonal skills, have mixed findings or have not been examined previously. For example, findings regarding extrinsic versus intrinsic motivators were more mixed (Burke & Hutchins, 2007). Emotional intelligence does not appear to have been examined in relation to the transfer generalisation and/or maintenance of interpersonal skills such as conflict resolution and leadership.

In general, the transfer of conflict resolution and leadership skills to the workplace requires further exploration. Hence, more research into the influencing effects of individual factors on transfer generalisation and maintenance of these skills is necessary to improve empirical understanding.

1.9 Influencing factors of training transfer – Work context

Transfer generalisation and maintenance are affected by the types of tasks and by individual differences in attitudes, motivation or self-belief. They are also affected by differences in the work context and work conditions, such as the degree of supervision and psychological

support received, opportunities to use and practice the new knowledge and skills learned, or the extent of training-to-job-adaptation required (Blume *et al.,* 2010).

Research on work-environmental factors has substantially increased since Baldwin and Ford (1988) identified supervisory support and opportunities to perform newly trained skills as critical components of supporting trainee skill transfer (Burke & Hutchins, 2007). The research emphasis until that time was predominantly on examining training program characteristics and those of individual learners. Researched less was the context of where and under what circumstances learners attempted to apply their learning, and whether these work characteristics assisted transferability and maintenance of training KSA into the workplace (Rouiller & Goldstein, 1993). The research focus since on the work context has contributed significantly to the knowledge base (Rouiller & Goldstein, 1993).

Organisational transfer climate variables enhance training self-efficacy, increase trainees' mastery (learning) goal orientation, and trainee motivation to transfer skills learnt (Chiaburu *et al.,* 2010). As Subedi (2004) emphatically states, "...training cannot be isolated from the system it supports" (p. 596). The meta-analytic review by Blume *et al.* (2010) found that organisational transfer climate had the highest relationship with training transfer, followed by organisational support. Blume *et al.* (2010) also found that organisational transfer climate had stronger relationships to training transfer when the focus of the training was open skills as opposed to closed skills. Also, when Blume *et al.,* (2010) examined a sub-set of open skills studies related to interpersonal/leadership skills training, they found work-environmental factors had a similar correlation with training transfer.

Organisational Transfer Climate

Organisational transfer climate refers to organisational factors that support or inhibit the ability to transfer learning to the workplace (Thayer & Teachout, 1995) through cues or consequences which may either prompt and support trainees to use new skills, or inhibit and create barriers to skill use (Burke & Hutchins, 2007; Snoek & Volman, 2014). For example, cues or consequences that may exist through work relationships or as a part of workplace policy or design (Burke & Hutchins, 2007). These are understood to be mediating factors between the organisational context and an individual's attitude towards their work (Holton, Bates, Seyler, & Carvalho, 1997).

Climate is defined as the practices and procedures used in an organisation that indicate or signal to people what is important (Rouiller & Goldstein, 1993). Organisations may have different climates for different aspects of their work; for example, a climate for safety and a climate for transferring learning (Rouiller & Goldstein, 1993). These climates are shaped by organisational values, beliefs and assumptions that can either support or discourage particular behaviours (Snoek & Volman, 2014). Chiaburu *et al.* (2010) state that organisational transfer climate variables, such as support from managers, opportunity and/or time to put learning into practice, or praise and recognition for transfer of acquired KSA, predict training transfer success more consistently than other factors (such as individual or training characteristics). In relation to transfer maintenance, any decreases in the use of trained skills at work has been argued to be due to constraints in the work environment such as the lack of rewards for using the skills (Baldwin & Ford, 1988; Kontoghiorghes, 2014).

According to Burke and Hutchins (2007), holistic or more systemic models of training transfer take into account organisational contextual factors. They highlight that transfer-related

research has found organisational transfer climate factors influence transfer outcomes directly and indirectly as a moderator between individual factors (e.g., as a correlate to transfer implementation intentions; Machin & Fogarty, 2004), post-training transfer interventions and transfer generalisation and/or maintenance. Machin and Fogarty (2004) suggest that transfer climate variables are likely to be a stronger determinant of post-training behaviour and training transfer, and only play a small part in influencing pre-training factors such as trainee readiness to undertake training. However, as Kontoghiorghes (2014) points out, though particular organisational transfer climate factors researched may differ from study to study, it is considered a critical aspect of the training transfer process and there is a general consensus regarding the main attributes of a supportive organisational transfer climate.

Snoek and Volman (2014) point out that, just as the process of transferring new skills is dynamic and complex, an organisation's transfer climate is also dynamic, with diverse influences at different times from various systems within an organisation. For example, an employee completing safety and risk management training will likely be influenced by the differing organisational systems and climates of both training transfer and safety when applying new safety KSA in their workplace; whereas an employee undertaking customer service training may be influenced by the transfer and customer service climates, therefore potentially encountering differing influences, perspectives or expectations.

Organisational transfer climate variables include organisational support such as supervisor and peer support, social or goal-setting cues, and opportunities to practice and use new skills in the work-place (Burke & Hutchins, 2007; Kontoghiorghes, 2014). Examples of a positive organisational transfer climate include individual learners receiving positive consequences (such as positive feedback) for correct use of training-based skills, or social

support from supervisors and peers in the form of group membership, incentives and/or positive feedback (Rouiller & Goldstein, 1993). Several organisational transfer climate factors are reviewed in the following sections. They are organisational support (including manager/supervisor and peer support), social and goal-setting cues, opportunity to practice and use new skills, and relevancy of the training.

Organisational Support

Organisation support has been found to be important in the transfer of new skills to the workplace in many studies (e.g., Baron & Morin, 2010; Facteau *et al*, 1995; Kontoghiorghes, 2004; Rouiller & Goldstein, 1993; Salas & Cannon-Bowers, 2001).

One aspect of organisational support is the alignment of the aims and objectives of the training program with organisational system processes such as its strategic direction, values, and HR policies and procedures (Burke & Hutchins, 2007; Snoek &Volman, 2014). Organisational systems, such as those related to performance, accountability, promotion, recognition and rewards, can support or hinder an employee's ability to apply their new KSA in their workplace (Snoek & Volman, 2014). Snoek and Volman (2014) point out the importance of the daily, practical work routines and conditions that employees encounter that support the transfer of new skills to the workplace. Examples they give include a reduced workload to allow time to practice new skills; a match between program content, work roles and organisational expectations; the availability of necessary organisational structure (e.g., how the organisation's hierarchy either supports or hinders transfer of KSA), equipment or tools; and the autonomy necessary to adapt working procedures as required to apply new skills; all of which impact employees' motivation and effort.

For example, Snoek and Volman (2014), in their study regarding teacher leadership development, found that although the majority of their participants and supervisors indicated that participants were motivated to transfer skills and had developed some teacher leadership competences, the impact on their roles and school varied. They concluded that the transfer of leadership competences to the workplace was not self-evident. Interestingly, the authors reported being unable to comment on the sustainability (*i.e.,* maintenance) of transferred skills in their study due to the short timeframe (four months) between graduation (from a two-year Master teacher leadership development program) and when transfer was measured (Snoek & Volman, 2014).

Another aspect to consider when examining organisational support in relation to training transfer is trainees' perceptions of organisational support. Chiaburu, van Dam, and Hutchins (2010) define perceived organisational support as "employees' belief about how much the organisation cares about them and values their contributions to the organisation" (p. 187). They suggest that perceived support from the organisation may bolster employees' self-esteem and feelings of being valued, thus increasing their job satisfaction and organisational commitment. Chiaburu *et al.* (2010) state that this then leads to increased work engagement due to employees' feelings of obligation to the organisation. Chiaburu *et al.* (2010) point out that training transfer research examining perceptions of organisational support is limited.

Further, though several studies report positive results regarding organisational support in relation to transfer, there are some inconsistent results. For example, Cheng and Ho's (2001) review reported conflicting findings related to organisational support, noting that 10 studies found positive relationships, two studies found negative relationships, and five studies found that the association was non-significant. Inconsistencies were attributed to poor research designs or

differences in operationalisation and measurement of factors, and differences in types of skill trainings in the studies (Cheng & Ho, 2001; Blume *et al.*, 2010). Hence there is a need to examine this relationship more fully in relation to what organisational support is provided that facilitates the transfer generalisation and maintenance of conflict resolution and leadership skills.

Manager and Peer Support

Organisational support for training transfer is usually defined in terms of variables such as the organisational culture, or in particular, the learning climate, and policies and procedures. These can, in turn, affect the extent to which managers, supervisors and peers will support training transfer. Of particular importance for those individuals attempting to transfer new KSA to the workplace will be the support they receive. Hence, it is important to consider not only organisational support for training transfer but also the support provided by the trainees' managers, supervisors, peers and team.

Supervisor support is defined as the extent to which supervisors' behaviour, actions and attitudes are congruent with training objectives and optimise employee use of new learning in the workplace (Baldwin, Ford & Blume 2009; Holton, Bates & Ruona 2000; Xiao 1996; Ng, 2015). Managers and supervisors can provide support by encouraging employees to attend training, as well as reinforcing the workplace application of the newly learned KSA (Ng, 2015).

Blume *et al.* (2010) found in their meta-analysis of open and closed skills training that supervisor support had a stronger relationship with transfer (effect size .31) than did peer support (effect size .14); although these relationships were based on small sample sizes. Burke and Hutchins (2007) suggest that supervisor support (together with peer support) is the most

consistent organisational transfer climate factor that explains the relationship between the work context and employees' ability to transfer new KSA.

Burke and Hutchins (2007) assert that manager supportive behaviours, which include discussing new learning, participating in training, providing encouragement and coaching trainees about the use of new KSA in their work, were salient contributors to the positive transfer of skills. The researchers refer to studies which found that trainee perception of managerial support for using skills on the job correlated with increased reports of transfer (e.g., Foxon, 1997). Furthermore, supervisor involvement in training, discussions about using new skills, and positive feedback were most recognised by trainees as positively influencing transfer of learning (Lim & Johnson, 2002). Snoek and Volman (2014) also point out the crucial role that workplace supervisors and coworkers play in the transfer process through the attitudes, perspectives, support and feedback they provide trainees on their return to work, the expectations that they have, and the involvement they demonstrate post-training. Ford *et al.*, (2018) reiterate the importance of manager support.

However, there are inconsistent results regarding supervisor support and training transfer (Awais Bhatti *et al.*, 2014; Van der Klink, Gielen, & Nauta 2001). For example, Ng (2015) points out studies which did not find any direct relationship between supervisor's support and training transfer. Indirect relationships with supervisor support have been more consistent, including in manager training (e.g., an indirect relationship moderated by motivation-to-learn) (Massenberg *et al.*, 2017; Ng, 2015).

Ng (2015) also points out the strong research focus on Western countries' organisational contexts. An example she gives is that of Blume *et al.'s* (2010) meta-analytic review which included studies that mostly originated in the United States and Canada. Culture may be an

important moderating consideration. For example, in Denmark, the organisational transfer influencing factors, supervisor and peer support were the least common transfer conditions identified (Sorensen, 2017). Further, due to conflicting results reported, Awais Bhatti *et al.* (2014) suggest that it is important for researchers to differentiate between the different kinds of supervisor support trainees may receive or need before, during, and after training; as well as the potential variability in support provided.

Transformational leaders, through feedback and support, can influence staff's intrinsic motivation, goal commitment and organisational commitment, leading to higher levels of task performance (Gillet & Vandenberghe, 2014). Also, DeRue and Wellman (2009) found that feedback mitigated diminishing returns associated with high levels of leadership skill developmental challenge; which they contributed to the enhancement of self-awareness. This thereby reduces any associated uncertainty regarding performance and success, and assists to reduce associated stress of challenging work experiences (DeRue & Wellman, 2009). This may similarly be applicable to staff's efforts regarding the transfer of new skills.

In relation to leadership training, Tracey, Hinkin, Tannenbaum and Mathieu's (2001) study regarding a two-and-a-half-day managerial knowledge and skills program found a significant relationship between the work environment in terms of perceived management support and recognition, pre-training self-efficacy and pre-training motivation. Gilpin-Jackson and Bushe (2007) found that managers undergoing the same training correlated highly (0.47) with employee skill utilisation. Results also highlighted that trainees were more likely to transfer skills when their managers had been through the same program and were actively practicing its skills and concepts. Trainees commented on the motivating effects of discussions, coaching, encouragement

and personal engagement with their managers upon their learning and utilisation of the new skills (Gilpin-Jackson & Bushe, 2007).

No studies were found in relation to conflict resolution training, transfer and the impact of supervisor support. However, studies such as Brown *et al.* (2011) and Zweibel *et al.* (2008) regarding conflict resolution in healthcare settings, point out the importance of managers and other leaders in supporting and guiding the resolution of conflict in teams. Furthermore, these researchers drew attention to the barriers to conflict resolution stemming from hierarchical structures or leadership problems. Hence, manager and/or leadership support to enable the transfer of conflict resolution skills in these settings would appear to be an important variable associated with training transfer and deserves further investigation.

In contrast, Facteau *et al.* (1995) found peer support to directly influence transfer and supervisory support to only indirectly affected skill transfer, through pre-training motivation. Peer support includes the encouragement trainees receive from their immediate workplace peers and colleagues, through feedback, problem-solving assistance, supplemental information and coaching assistance on their return to work after training (Martin, 2010). Martin's (2010) study regarding manager training in a large US manufacturing company, found that trainees in a more favourable transfer climate division and those with greater peer support showed greater improvement in their skills. In addition, he reported that peer support mitigated the effects of a negative transfer climate, with trainees in a negative climate achieving the same degree of transfer as those in a positive climate. Burke and Hutchins (2007) points out that although several studies have found peer supportive behaviours to be the most influential on transfer, they state that a lack of manager support limited the positive influence of peer support on skill maintenance.

Other studies examining peer and/or manager support on training transfer have had mixed results. Awais Bhatti *et al.* (2014) point out the inconsistency, with some research asserting that support plays an important role in the training transfer process; that peer support more significantly influences training motivation and transfer compared to supervisor and management support; while other studies did not find any significant relationship between peer or manager support and training transfer, and/or transfer motivation. For example, Baron and Morin's (2010) study examining organisational, manager and peer support found they were not significantly associated with self-efficacy post-training.

Differences in study definitions of peer support may explain the mixed results (Awais Bhatti *et al.,* 2014). These variations may result in different associations and relationships with transfer generalisation and other factors, such as motivation (Awais Bhatti *et al.,* 2014). For example, peer support has been defined in the following ways:

1. Caring for colleagues in applying new knowledge;
2. Encouraging the incorporation of new learning;
3. Peer expectations and behavior in relation to the transference of new skills; or
4. Peer appreciation for using new skills

Chiaburu and Marinova (2005) agree, stating that the theoretical underpinnings of supervisor and peer support remain unclear, and therefore these relationships need further examination. Ultimately, further research is required to clarify these differences, especially how they relate to the transfer of soft skills such as conflict resolution and leadership.

Social and Goal-setting cues

Other organisational transfer climate variables found to be associated with training transfer are situational cues. Situational cues can be categorised into different types. Two are goal-setting and social cues. Goal-setting cues occur when supervisors/managers give behaviourial or motivational cues or reminders to set goals either before training or on return to work post-training that encourage skill utilisation. (Rouiller & Goldstein, 1993). Social cues arise from group membership and include the influence of behaviours and practices shown by supervisors, peers and/or subordinates. For example, new managers who use the newly trained skills may supervise differently from existing managers (Rouiller & Goldstein, 1993) or training alumni may utilise terminology learnt in training which is best understood by others who attended the training.

Social and goal-setting cues may be given by managers, peers and/or other staff, or communicated through organisational policies or rhetoric that either encourage or discourage the transfer of learning, dependent on individual perceptions (Thayer & Teachout, 1995). Cues act as either behaviourial reinforcers or extinction processes, for example, through either rewards or censure (Thayer & Teachout, 1995). They can assist with the provision of opportunities to use new KSA on return to work as they act as reminders of learning (Rouiller & Goldstein, 1993).

Situational cues and consequences predict the extent to which training transfer occurs (Rouiller & Goldstein 1993). Richman-Hirsch's (2001) study found that trainees who perceived a supportive organisational transfer climate were more likely to use goal-setting to enable transfer of new customer service skills than those who perceived an unsupportive transfer climate. Similarly, Machin and Fogarty (2003) found in their computer skills transfer study that transfer

implementation intentions were significantly associated with all individual transfer-enhancing activities, especially self-control cues, relapse prevention and goal-setting cues.

In relation to studies examining leadership or conflict resolution skills and training transfer, most previous studies have focused on individual factors and/or training design. Essentially, the majority of studies have overlooked the important role of workplace context and transfer climate (Rouiller & Goldstein, 1993; Sørensen, 2017). No studies were found that examined social and goal setting studies in relation to the transfer of conflict resolution skills.

Rouiller and Goldstein (1993) found in their study regarding mandatory assistant-manager training, that situational cues, including social and goal-setting cues, and organisational consequences in relation to transfer generalisation and performance were significantly related to transfer behavior which was in turn related to work performance. Situational cues contributed significantly, explaining 36 percent of the variance. Their study provides support for the importance of situational cues, in transferring leadership trained KSA to the workplace. However, it is difficult to determine the extent to which Rouiller and Goldstein examined the interpersonal skills of leadership. Hence, there is a need to examine more fully social and goal setting cues in the context of transfer generalisation and maintenance of interpersonal skills like conflict resolution and leadership skills.

Opportunity to practice/use

An important aspect of being able to apply and maintain new KSA in the workplace is having the opportunity to practice and use them. This was one of the important organisational climate factors identified by Baldwin and Ford in their influential (1988) review. Ford, Quiñones, Sego and Sorra (1992) define the opportunity to use/perform new KSA as "the extent to which a

trainee is provided with or actively obtains work experiences relevant to the tasks for which he or she was trained" (p. 512).

Salas and Cannon-Bowers (2001) point out that delays between training and actual use can create significant skill decay. Ford *et al.* (1992) suggest that three organisational contextual factors, namely supervisory attitudes towards the trainee, team support and team work-flow pace, particularly affect the opportunity to use and perform new skills post-training. For example, supervisors may provide more or fewer opportunities to perform trained tasks depending on their perceptions or attitudes towards the trainee regarding their likability, skill or career potential (Ford *et al.,* 1992).

Ford *et al.* (1992) examined opportunities of Airforce graduates to perform technical skills four months post-training. They found that graduates experienced different opportunities to perform the trained tasks due to supervisory attitudes and workgroup support as well as trainee self-efficacy and cognitive ability. Airforce graduates who were perceived as competent and likeable by their supervisor obtained greater breadth of experience and performed the more complex and difficult tasks for which they were trained compared to graduates who were perceived less favourably (Ford *et al.,* 1992). Trainees may experience not only different numbers of opportunities but also different levels, types and complexity of tasks resulting in different levels of skill transfer.

There is strong evidence that positive transfer is limited when trainees are not provided with opportunities to use new KSA in their workplace (Burke & Hutchins, 2007). In the research they reviewed, Burke and Hutchins (2007) found that limited opportunity to perform skills at work was the highest impediment to successful training transfer; and that it was rated as the highest form of support as well as the biggest obstacle to transfer.

In relation to interpersonal skills, no studies were found that examined conflict resolution skills, transfer and opportunity to use new skills. However, there were studies in relation to leadership/manager skills. For example, in relation to managers being given opportunities to practice newly learned skills, Taylor *et al.* (2009) found in their meta-analytic study that, with the exception of those based on self-ratings, average effect sizes were larger and more congruent across rating-sources for training programs that included opportunities to practice skills. They highlight, however, that studies rarely indicated the number of hours of practice provided.

Massenberg *et al.* (2017) found in their manager training study that opportunity to use and transfer effort–performance expectations before the training program showed positive relationships with motivation-to-transfer. They explain that trainees who perceived a lack of opportunity to use new KSA after the training, entered the program with a lower level of motivation-to-transfer. Furthermore, trainees who have more autonomy over the way they work may be better able to create opportunities to use new skills than those with less autonomy (Axtell, Maitlis & Yearta 1997).

Though research on opportunity to practice learning has strong research support, a gap is apparent with respect to the transfer generalisation and maintenance of conflict resolution and leadership skills. Providing opportunity to practice and use new interpersonal skills in the workplace seems intuitively to be more complex and problematical in relation to perceptions of personal, emotional and psychological safety.

Relevancy of training

Several factors of a supportive organisational transfer climate for training transfer have been discussed. The last factor to be discussed is the relevancy of the training content and its utility to the trainee and their organisation.

Relevance of the training is very important in relation to transfer generalisation and maintenance of skills and has been found to be an important predictive factor (Axtell *et al.*, 1997; Burke & Hutchins, 2007; Yamnill & McLean, 2005). Relevance of training is related to its perceived utility and value (Burke & Hutchins, 2007) to the individual, their work-role and the organisation, and influences motivation and ability to transfer new KSA to the workplace (Burke & Hutchins, 2007). Burke and Hutchins (2007) highlight that relevancy may be perceived in terms of immediate training needs and influenced by evaluations of training practicality, quality or credibility, opportunity for promotion and the likelihood of improving skills and workplace performance. Yamnill and McLean's (2005) study regarding Thai employees found that training-content relevance was the primary factor that predicted trainees' perceptions of successful transfer.

Drawing upon identical elements theory (Thorndike, 1901), training programs developed to be consistent with the organisational values, beliefs and business needs of the organisation are more likely to ensure near transfer (Burke & Hutchins, 2007). Van der Locht *et al.* (2013) define identical elements as "the extent to which the stimuli and responses in the training setting are identical to those in the actual performance environment" (p. 423). Similarity between the training and workplace context is important because it increases relevance of the training situation; and based on employee and organisational needs, triggers effective responses and

skills, due to being practised in training as they are to be performed in the workplace (Baron & Morin, 2010; Tharenou, Saks & Moore, 2007; Van der Locht *et al.*, 2013)

In relation to interpersonal skills, no studies were found that examined conflict resolution skills, transfer and relevance of the training to the individual or the organisation. However, there were a few studies in relation to leadership/manager skills. Baron and Morin (2010) found in their study regarding executive coaching of managers that those who did not perceive their management training as useful in meeting the demands of their work showed less self-efficacy than did those who perceived the training as useful. They state that relevancy of the training is very important in the teaching of soft skills as these skills were more difficult for trainees to learn. Van der Locht *et al.'s* (2013) study found expected utility (relevance) contributed strongly and directly to the prediction of training transfer as managers need to perceive that the training is important in achieving valued outcomes.

Managers often experience high work pressure, competing demands and limited time for offsite training experiences. Van der Locht *et al.* (2013) suggest that perceptions of training relevance may be especially important for managers and stress the importance of developing training that is highly relevant to employees' role.

As outlined, training relevance to the individual, their work and organisation, is important for successful transfer generalisation and maintenance. Yet there is limited research on training relevance and transfer in the context of interpersonal skills; in particular, conflict resolution skills. Further, due to personality and interest differences, what may be identified as relevant or important in training content by the organisation may be perceived differently by the individual, especially in relation to soft skills. This gap in the literature is important to consider.

Summary of Organisational factors

As outlined, several organisational transfer climate factors have consistently been found to influence the transfer of KSA to the workplace. Those identified include:

- organisational support,
- manager and peer support;
- goal-setting and social cues;
- opportunity to practice and use new KSA; and
- training relevancy.

There are more empirical studies in relation to organisational transfer climate factors since Baldwin and Ford's influential (1988) review. Some organisational transfer climate factors have either been studied less frequently or have mixed findings; such as the studies in relation to supervisor and peer support (Awais Bhatti *et al.*, 2014; Ng, 2015; van der Klink *et al.*, 2001). However, research has not fully considered the impact of organisational transfer climate on the transfer of managerial leadership skills. Importantly, the contribution of organisational transfer climate on the transfer of conflict resolution to the workplace has not been examined, highlighting a significant gap in the field. Hence, more research in these areas are needed.

1.10 Summary of research and key areas for further research

Conflict resolution and managerial leadership skills are important for organisational effectiveness at all levels. At the individual and team level, effective leadership and conflict resolution skills support individual growth, and mental and emotional health as evidenced by research confirming its link to job satisfaction, team morale, reduced absenteeism and sick leave

as well as reduced job turnover (Brinkert, 2010; Gilin Oore *et al.*, 2015). At an organisational level, effective leadership and conflict management skills have been linked to organisational sustainability, productivity and effectiveness (Baldwin *et al.*, 2011; Gilin Oore *et al.*, 2015). They are especially important in work areas such as healthcare where conflict is common within and between healthcare professionals (Back & Arnold, 2005; Katz, 2007; Kaufman, 2011), affecting decision-making, communication and professional relationships. The consequences may be increased staff burnout and/or impact on patient care with increased errors, patient morbidity and mortality (Baldwin & Daugherty, 2008; Brinkert, 2010; Lee *et al.*, 2008; Suter *et al.*, 2009).

There is a clear imperative for organisations to up-skill employees in conflict resolution and leadership skills. However, both are complex interpersonal skills which have been shown to be more difficult to transfer to the workplace. Estimates are typically low regarding the ability of trainees to transfer such KSA; yet both types of skills are required for effective individual and organisational performance.

Consideration of transfer research suggests that focusing on two issues regarding the transfer of KSA may assist with explaining past research inconsistencies. Firstly, how training transfer is defined and operationalised. Definitions of training transfer refers to two stages. Yet when studied, it is often operationalised as one, with transfer generalisation favoured over maintenance of skills. The examination of whether transfer generalisation and maintenance can potentially occur concurrently for different skills within complex interpersonal skill-sets is needed. This emphasises the conceptualisation of transfer as a two-staged process. Secondly, the differences between the types of skills studied. Categorising trained skills into either hard or soft skills will allow better comparison between studies when examining how individuals apply new skills to their workplace.

Further, a pattern of key factors to predict training transfer is generally elusive, particularly in relation to interpersonal skills. All previous reviews of transfer research, including those of Aguinis and Kraiger (2009), Alvarez *et al.* (2004), Burke and Hutchins (2007), Cheng and Ho (2001), Cheng and Hampson (2008), and Tharenou *et al.* (2007), highlight inconsistencies or mixed findings in relation to the individual and organisational factors that influence training transfer.

This review has highlighted that the individual factors of self-efficacy, intrinsic motivation, motivation-to-learn, motivation-to-transfer, organisational commitment and transfer implementation intentions have had either consistent, mixed or promising research results in relation to the training transfer (generalisation and maintenance) of interpersonal skills. In addition, emotional intelligence is potentially an important individual factor of, specifically, the training transfer of conflict resolution and leadership skills.

Organisational factors were also highlighted as important regarding the transfer generalisation and maintenance of interpersonal skills. Organisational transfer climate factors of particular importance include organisational support embedded in systems, manager/supervisor and peer support, goal-setting and social cues, and opportunity to practise and use new skills, as well as the relevancy of trained skills to the individual's work-role or organisation.

Training transfer research suggests that both individual and organisational factors are important. However, further research is needed for organisations to improve training effectiveness and the organisational mechanisms that influence transfer generalisation and maintenance. Such research is particularly necessary due to knowledge gaps on training transfer with respect to conflict resolution and leadership training, which are essential to ensure mentally healthy, effective workplaces.

Research gaps identified in this literature review include the following:

- Transfer generalisation and maintenance of interpersonal skills, particularly conflict resolution skills;
- Transfer generalisation and maintenance of skills concurrently in complex interpersonal skill-sets where disparate skills may be generalised and/or maintained at different rates;
- Research that incorporates multiple influencing factors (e.g., individual characteristics and organisational factors) in the one study; and,
- Emotional intelligence as a potential influencing factor of the transfer generalisation and maintenance of interpersonal skills, leadership and conflict resolution skills.

1.11 Research aims and overview

The overall aim of this dissertation was to examine the individual and organisational factors that influence the training transfer (generalisation and maintenance) of conflict resolution and managerial-leadership skills to the workplace. A theory-driven approach was taken by focusing on how transfer generalisation and maintenance are defined and operationalised when examining the complex interpersonal skills, conflict resolution and leadership. As discussed earlier, training transfer is a broad construct with many before, during and after training influencing factors. Therefore, several specific areas were explored that are consistent with the aim of this dissertation.

Four studies were undertaken. These four studies facilitated exploration of specific hypotheses, designed to address different aspects of the overall research aim. The first study examined the cross-sectional result of conflict resolution transfer generalisation. The second and

third studies examined the transfer generalisation and maintenance of conflict resolution and leadership skills retrospectively. Lastly, the fourth study evaluated the transfer generalisation and maintenance of leadership skills longitudinally. Appropriate Human Research Ethics approvals were granted for each of the described studies herein. The studies are presented in the following chapters:

2. Study one, entitled *Undergraduate medical and nursing students' motivation and attitudes towards interprofessional learning and their impact on utilising conflict resolution skills;*
3. Study two, entitled *Factors that influence the transfer generalisation and maintenance of conflict resolution programs of healthcare training and development units: a retrospective study;*
4. Study three, entitled *Factors that influence the transfer generalisation and maintenance of managerial-leadership skills: a retrospective study;* and
5. Study four, entitled *Individual and organisational factors that influence transfer generalisation and maintenance of managerial-leadership programs.*

The overall findings of this series of studies and their implications are discussed in chapter six.

Due to the paucity of research in this area, the first study examined the transfer generalisation of conflict resolution skills. Second year nursing and medical university students' skill generalisation and attitudes were examined as well as their motivation-to-learn in the context of a university-based inter-professional learning (IPL) conflict resolution course. Study one is discussed in detail in chapter two.

Studies two and three retrospectively examined multiple individual and organisational factors that influence the transfer generalisation and maintenance of conflict resolution and

leadership skills respectively. Research participants in study two included nurses, medical officers and allied health professionals employed by an Australian state-wide healthcare service. They had attended various accredited conflict resolution sessions and/or training within the previous three years. Research participants in study three were Alumni of a twelve month managerial-leadership university-based program. They had attended the program within the past 14 years. As examining training transfer in relation to different conflict resolution courses may potentially confound results in the second study, the third study examined training transfer in relation to one particular leadership program, to hold training variables relatively constant. Further details are discussed in chapters three and four respectively.

As there may be limitations associated with examining transfer generalisation and maintenance retrospectively due to recall bias (Hassan, 2006), the fourth study examined leadership training longitudinally over three months. Multiple individual and organisational factors were examined. Research participants in study four were employees of one organisational department who attended one of two bespoke managerial-leadership university-based programs. One training built on the learning of the other. Further details can be found in chapter five.

The conflict management and leadership training programs that formed the basis for these studies were all accredited programs and were established as appropriate to the respective training needs of participants and their organisations, suggesting that training program variables were unlikely to negatively influence transfer generalisation and maintenance in these studies.

Chapter 2: Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and perceived impact of learning conflict resolution skills.

2.1 Statement of Authorship

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Sonya Vandergoot, first author, PhD Candidate

This paper reports on original research conducted by Sonya Vandergoot during the period of her Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. She is the primary author of this paper. She was responsible for the conception of this study, literature review, developing the research aims and hypotheses and data collection and analyses; and wrote up the manuscript. Ms Vandergoot was the first author and corresponding author for the manuscript and was primarily responsible for revisions to the paper. Her overall percentage of contribution to the paper is 80%.

Dr Aspa Sarris, Dr Neil Kirby and Dr Helena Ward were the supervisors and/or contributors of the research program to which this manuscript belongs. They collaborated with Ms Sonya Vandergoot on the development of the content and structure of the manuscript and assisted with editing and proof reading. Ms Vandergoot was responsible for the conceptualisation of the research aims and hypotheses, literature review, statistical analysis and write-up of this manuscript. Their role was to discuss the feasibility of her research proposals, provide support and assistance when she encountered difficulties and to provide feedback and editing on manuscript drafts. They give permission for this paper to be incorporated in Ms Vandergoot' submission for the degree of Doctor of Philosophy from The University of Adelaide.

NB: Please refer to Appendix A for a copy of the signed (original) version.

2.2 Preamble

The first study examined the transfer generalisation of conflict resolution skills to address the paucity of research in this area of these skills. This study drew upon current training transfer research in combination with research relevant to interprofessional learning (IPL). The cross-sectional result of second year nursing and medical university students' skill generalisation from a three week university IPL conflict resolution course was examined.

Students' attitudes to IPL and motivation-to-learn were considered in reference to skill generalisation. Although the course had been designed and assessed as providing relevant interprofessional learning, including conflict management skills, for health professionals, perceived contextual relevancy of learning conflict resolution skills and opportunities to practice them was considered low for the medical students. This was due to medical students not undertaking any clinical placements at the time of the learning, had not undertaken any placements nor would they do so until the fourth year of their six year degree. In comparison, nursing students were undertaking clinical placements in hospitals at the time of undertaking the conflict resolution course; and had completed clinical placements in all of the previous three semesters (over one and a half years), thereby increasing their knowledge, understanding and experience of the healthcare context.

This study was intended to facilitate understanding of training transfer of conflict resolution KSA and the factors that influence it. This study may confirm the importance of motivation, attitudes and contextual relevancy (*i.e.*, the context of the interprofessional learning sessions and opportunities to practice skills through clinical placements). Such information may be used in the development of university-based conflict resolution courses and to determine

optimal timing of delivery of such courses, to increase the potential for training transfer, motivation and the contextual relevancy of learning.

2.3 Abstract

Conflict resolution skills are important for all healthcare professionals as conflict and miscommunication can have detrimental effects on decision-making, potentially impacting significantly on patient care, morbidity and mortality. Interprofessional learning (IPL) has been found to increase collaboration and improve collegial relationships and hence may be an appropriate way to increase conflict resolution skills among healthcare graduates. This study examined transfer generalisation of conflict resolution skills, motivation-to-learn and attitudes to IPL of second year medical (n=52) and nursing (n=74) undergraduate students (unspecified n=29) who undertook an IPL conflict resolution program. Results indicated that motivation-to-learn, attitudes to IPL and transfer generalisation of conflict resolution skills were significantly related to each other, even when controlling for other variables, such as age and gender. When comparing the two groups, undergraduate nursing students were found to have statistically higher motivation-to-learn and perceived transference of conflict resolution skills, and reported more positive attitudes to IPL than medical students. Some of these differences may be attributed to lack of clinical placements for medical students in the first half of their university degree, giving them less opportunity to apply the conflict resolution skills taught, as well as less contextual relevance. How medical students perceive the relevance of learning conflict resolution skills may potentially affect their motivation-to-learn, attitudes to IPL and transference of skills. Without the contextual relevancy of placements at the time of learning

for medical students, the newly acquired conflict resolution skills are less likely to transfer to practice in an optimal fashion.

2.4 Introduction

Interprofessional learning (IPL) is defined as "when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (CAIPE, 2002). IPL has been identified as a beneficial way of promoting positive outcomes in healthcare education and clinical skills (Barr, 2009; Williams, Lewis, Boyle, Brown & Holt, 2008); and improving attitudes and interpersonal skills of teamwork and collaboration (Parsell & Bligh, 1999). IPL occurs increasingly in undergraduate medical and nursing courses to increase understanding of professional roles and to enhance student preparedness for team-based care (Reilly *et al.*, 2014).

This study examined the IPL of second-year undergraduate medical and nursing students, in the context of a conflict resolution course that the students completed as a part of their respective university degrees. Although conflict resolution is an important skill for effective collaborative practice (Kaufman, 2011) and hence relevant in interprofessional education (IPE) for both undergraduates and professionals alike, it is important to evaluate IPL effectiveness in light of current training transfer research on relevancy and opportunity to use new skills in the workplace (e.g., Brown & McCracken, 2009; Dettlaff & Dietz, 2004).

Interpersonal conflict is defined as a disagreement between two or more parties who perceive a threat to their needs, interests or concerns (Mayer, 1990); and is a common occurrence in workplaces requiring teamwork such as healthcare organisations (Brown *et al.*, 2011; Kaufman, 2011; Lee *et al.*, 2008). Healthcare professionals are required to work collaboratively

in interprofessional teams (Leever *et al.,* 2010). Each have their own perspective on patient-care which may lead to conflict.

Added to this is the organisational context in which different professions work. Healthcare organisations tend to be a time and resource poor, hierarchical setting with power inequalities (Kaufman, 2011; Zweibel *et al.,* 2008). Conflict over role boundaries, scope of practice and accountability are common (Brown *et al.,* 2011). Also, difficult, contentious or life-or-death decisions are common. All these factors make some level of conflict inevitable (Brown *et al.,* 2011; Kaufman, 2011).

Conflict within and between healthcare teams can have negative consequences. Research indicates that teams with a high frequency of relationship conflict have higher staff turnover, absenteeism, job dissatisfaction and reactivity to job stressors, and lower productivity in comparison to teams that have lower relationship conflict (Gilin Oore *et al.,* 2015). Conflict can also have detrimental effects on decision-making, with disturbing consequences in terms of patient-care, such as increased length of hospital stays and increased patient morbidity and mortality (Lee *et al.,* 2008).

Suter *et al.* (2009) state that miscommunication or communication errors have consistently been linked to patient harm. For example, in The Joint Commission's 2007 report on US hospital performance and patient adverse-events, communication failure was listed as the leading root cause of these events which included patient deaths; accounting for approximately 65% of all US hospitals' adverse-events in the previous 12 months. Also, the 2003–2004 UK Health Service Ombudsman report cites communication as a key factor in many health service complaints (Heaven *et al.,* 2006).

Baldwin and Daugherty (2008) in a US national multi-specialty survey of hospital medical residents, found a strong association between serious conflicts with other professionals and self-reported medical errors. Though no causal or direct linkage could be confirmed, they found that over 20% of surveyed medical residents (n=6106) reported some serious interprofessional conflict with other staff members; and that those who reported such conflicts were twice as likely to report medical errors. Similarly, medical residents who reported errors were twice as likely to report conflict. Surprisingly, despite acknowledgement that it occurs, conflict in healthcare is rarely researched (Baldwin & Daugherty, 2008; Leever *et al.*, 2010).

Healthcare professional bodies have identified the ability to assess and resolve conflict as a key health professional competency (Frank, 2005; Walczak & Absolon, 2001; Zweibel *et al.*, 2008), however, communication and conflict resolution skill development appears to either seldom occur in healthcare education (Garcia Vivar, 2006; Lee *et al.*, 2008) or not to the extent required (Walczak & Absolon, 2001). For example, Zweibel *et al.* (2008) highlight that most physicians learn these skills through ad hoc peer-to-peer informal tutelage or socialisation. Further, Walczak and Absolon (2001) point out that senior nurses and nurse managers repeatedly identify communication and conflict resolution skills training in nursing educational need-assessment polls.

In light of this research and the contextual factors healthcare professionals face, it is not surprising that health education institutions have searched for ways to address these issues. One important direction has been to increase interprofessional collaboration and teamwork through IPL of team-based communication skills, including resolving conflict (Brock *et al.*, 2013); as communication and conflict resolution have been identified as key interprofessional competencies for collaborative practice (IPEC, 2012).

Though there is considerable research regarding many aspects of interprofessional healthcare teams, including interprofessional team-based training programs (Reilly *et al.*, 2014) and interprofessional team-building (Cohen *et al.,* 2016), there is a distinct lack of research with respect to IPL effectiveness (Simmons *et al.,* 2011; Zwarenstein, Reeves & Perrier, 2005). There is also lack of research on IPL that includes conflict resolution skills and the optimum time to introduce this type of IPL to undergraduate students.

Timing of the introduction of IPL is often discussed in the literature in the context of undergraduates' attitudes to IPL and changing stereotype perceptions of other healthcare professions (e.g., Curran, Sharpe, Forristall & Flynn, 2008; Hawkes, Nunney & Lindqvist, 2013) and how early IPL introduction can positively influence these attitudes. However, as Barr, Gray, Helme, Low and Reeves (2016) state, "relatively few IPE interventions are subject to independent and external research" (p. 15). Hayashi *et al.* (2012) point out the limited evidence of evaluation or research into early IPE introduction.

Discussion on the timing of IPL undergraduate courses in relation to students having the opportunity to use skills taught, and the delay between course delivery and career commencement, is also limited. Though clinical placements assist mitigate issues associated with the delay between skill-learning and skill-practise, the implications of this delay has not been fully examined. Reilly and colleagues' (2014) study into team-based IPL training programs involved undergraduates from different year levels and professions. They recommended that healthcare students should be from the same training level in IPE curricula to allow for standardisation of their learning. Yet they did not explore what the potential differences between professional degrees may signify (e.g., three year nursing degree in comparison to a six year

medical degree) and how this may influence attitudes to IPL or their motivation to learn new skills.

Motivation-to-learn and the opportunity to use skills taught in training in the workplace are topics of concern to researchers of training transfer. Of the limited conflict resolution skills education for healthcare professionals that takes place (Garcia Vivar, 2006; Lee *et al.*, 2008; Zweibel *et al.,* 2008), little is known about whether such skills are consequently transferred to (*i.e.,* utilised in) the healthcare workplace.

Influential Baldwin and Ford (1988) defined transfer of training as the effective and continuing application of KSA learned or acquired from training to the workplace; and the subsequent generalisation and maintenance of these KSA. Some key factors have been identified that influence the transfer of KSA from training to the workplace (see reviews by Baldwin & Ford, 1988; Burke & Hutchins, 2007; Cheng & Hampson, 2008); including motivation-to-learn, opportunity to use and organisational transfer climate. Organisational transfer climate refers to organisational/institutional factors that support or inhibit individuals' ability to transfer their learning to their workplace (Holton *et al.,* 1997) and are understood as mediating factors between the organisational context and an individual's attitude towards their work (Holton *et al.,* 1997).

One important factor, motivation-to-learn, is described as a specific desire to learn the content of a training program (Noe & Schmitt, 1986). Motivation-to-learn is influenced by the learners' perceptions of the training content's relevancy and applicability to their practice or work (Dettlaff & Dietz, 2004). In the healthcare sphere, research regarding the transfer of conflict resolution skills or the transfer of interprofessional learning (e.g., Simmons *et al.*, 2011) is limited (Zweibel *et al.,* 2008).

This study was conducted to examine second year nursing and medical students' attitudes to IPL, motivation-to-learn and transfer generalisation of learning in the context of a three week IPL conflict resolution program. The overall goal of the interprofessional course was for students to acquire effective conflict resolution skills while learning "from and about" each other's profession. The aim was to demonstrate that attitudes to IPL and motivation-to-learn influences the transfer generalisation of conflict resolution skills. Based on the above research, it was hypothesed that:

> Attitudes to IPL, motivation-to-learn and the generalisation of conflict resolution skills will be positively associated with each other (H1); and
>
> Undergraduate nursing students will have more positive attitudes to IPL, higher motivation-to-learn and report greater transfer generalisation of conflict resolution skills than medical students, due to the earlier clinical placement opportunities in their degree which increases both the opportunities to practice conflict resolution skills and the associated relevancy of the learning experience (H2).

2.5 Methodology

This study utilised a cohort retrospective (post-training) survey to examine the attitudes to IPL, motivation-to-learn and perceptions of transfer of second year nursing and medical students attending an Australian IPL conflict resolution course. The study was introduced to students at the end of their second IPL conflict resolution session. An information sheet inviting participation was distributed to them at that time. At the final/third session, students were invited to complete a research participant consent form and a survey; with time allocated for its

completion within the session. No incentive to participate in the study was offered to participants. This research project was approved by the University of Adelaide's Human Research Ethics Committee (HREC reference number 15/84).

IPL Conflict Resolution course

The IPL conflict resolution program was part of a new curriculum offered in 2015 by a university's Health Simulation and Skills Centre through the Schools of Medicine and Nursing. The conflict resolution program was the second of six IPL courses to be offered to nursing and medical students over three years. Scheduling of the program was based on Schools' scheduling logistics and students' availability.

The program covered basic conflict resolution concepts. For example, body language, assertive communication (win/win versus win/lose), negotiation and conflict resolution styles (Thomas, 1992). It also taught utilisation of the DESC (describe-express-suggest-consequences) script developed as part of the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) toolkit (Lisbon *et al.,* 2016) which is an assertive communication strategy (see Figure 1).

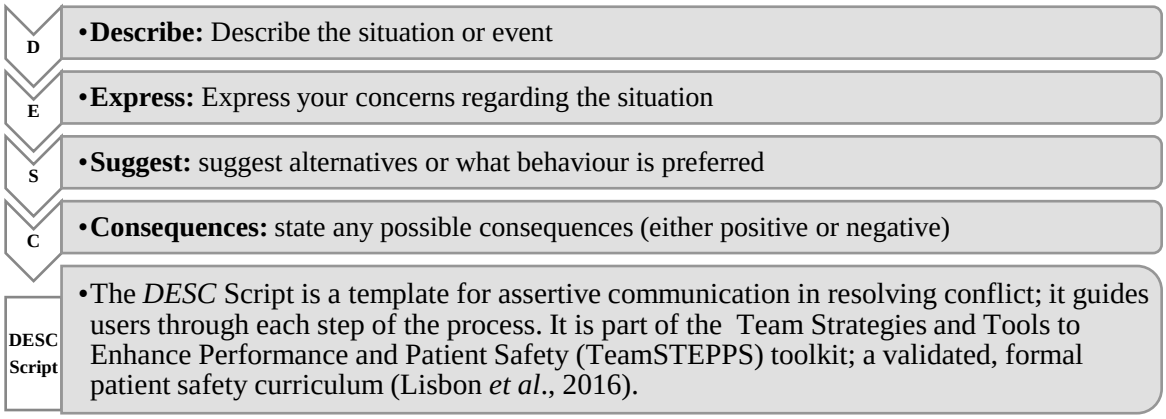

Figure 1: DESC Script - steps for assertive communication

The IPL conflict resolution program was designed to be highly interactive and practical; with at least 80 percent of session time spent actively engaged in small-group tasks, role plays, demonstrations and facilitated discussions. The learning activities were structured to achieve "high-road transfer" through active participation and self-reflection, comparisons and participant-volunteered examples. High-road transfer is the "conscious application of abstract knowledge learned in one situation to new situations" (cited in Zweibel *et al.*, 2008, p. 323). There was no assessment in the program. A non-graded pass was achieved through attendance.

The IPL conflict resolution program was comprised of three one-hour sessions delivered over three weeks in second semester, 2015; and an e-learning component whereby theoretical conflict resolution concepts and background information were given. With a maximum of 20 students and a minimum of two facilitators per session, the program was offered four times per week, every three weeks to allow all students to attend. There were four repetitions of the program (every three weeks) which is referred to as a "block" (e.g., four blocks).

Students were asked to complete the associated e-learning module and practice using the DESC script between sessions (extra-curricular). On their return to the following session, they were asked to share their experiences of practicing the DESC script. The presenter also demonstrated and role-modelled its use. Practice of skills was emphasised throughout the program as being of the utmost importance to enable the transfer of the skills in the short term and to their eventual career.

Sample and Data collection

Eligible participants were second year students enrolled in either the Bachelor of Medicine/Bachelor of Surgery (MBBS) (n=136 enrolled) or Bachelor of Nursing (BN) (n=150

enrolled) degrees who undertook a 2015 second semester IPL conflict resolution program. This was both the medical and nursing students' second exposure to IPL. They had previously attended an IPL program on communicating in clinical settings (three sessions of one hour) in first semester, 2015. There was no topic content overlap between the two courses.

A total of 158 students (MBBS: n=52; BN: n=74; unspecified data: n= 32) participated in this study. Ages ranged from 18 to 52 years (SD 4.56 years) with a mean age of 21.25 years. Medical students were a more homogenous group age-wise with 79% aged between 19 and 20 years of age (SD 1.04 years) with a maximum age of 23 years. In comparison, 53% of nursing students were aged between 19 and 20 years (SD 5.77 years) with a maximum age of 52 years (refer to Table 1).

Clinical placement exposure differed between the two student groups. Nursing students were either undertaking concurrently or had just completed their fourth clinical placement (*i.e.,* completed 885 hours by end of second year). Medical students had not undertaken any clinical placements in their degree thus far. They undertake placements in the fourth year of their six year degree.

Study Participants		Gender	Student Age (in years)	Number of Course Sessions attended
Nursing	n (valid)	74	74	72
	Missing	0	0	2
	Mean		21.88	2.94
	Median		20.00	3.00
	Std. Deviation		5.77	0.23
	Range	Male (8) Female (66)	18-52	1-3
Medicine	n (valid)	52	52	52
	Missing	0	0	0
	Mean		19.98	2.65
	Median		20.00	3.00
	Std. Deviation		1.04	0.59
	Range	Male (23) Female (29)	19-23	1-3
Unknown*	n (valid)	29	29	25
	Missing	3	3	7
	Mean		21.93	2.92
	Median		20.00	3.00
	Std. Deviation		4.58	0.28
	Range	Male (3) Female (26)	19-40	1-3

*data not supplied by participants

Table 1: Demographic Data according to student group

Calculated using student attendance of final/third sessions, the survey response rate was approximately 89%. As shown in Table 2, attendance and participation varied between the two student groups. According to University attendance records, a total of 152 students (nursing n=109: 73%, and medical students n=43: 32%) attended all three IPL conflict resolution sessions and approximately 12% of students enrolled did not attend any sessions. Through consecutive blocks, medical students' attendance dropped in comparison to nursing students.

Blocks of IPL Conflict Resolution programs**	University Enrolment Number of Students			Third Session Attendance* Number of Students			Survey completion rates Total number of students			
	Nursing	Medical	Total	Nursing	Medical	Total	Nursing	Medical	Missing Data	Total
Block 1: 14 Aug 2015	34	34	68	30	23	53	22	22	6	50
Block 2: 4 Sept 2015	34	34	68	26	17	43	19	16	5	40
Block 3: 9 Oct 2015	35	34	69	32	10	42	17	10	9	36
Block 4: 30 Oct 2015	47	34	81	35	5	40	16	4	12	32
Total:	150	136	286	123*	55*	178*	74	52	32	158

NB: enrolment and attendance numbers were obtained from University attendance records.
** Third session attendance numbers may include students who were absent from the first or second session*
*** Each block is comprised of 4 programs (e.g., 4 x 3 sessions); each student attended 1 x 3-session program.*

Table 2: Student enrolment, attendance and survey completion rates for final/third session of IPL Conflict Resolution Program

Materials

The survey consisted of three measures:

1. a ten-item measure assessing attitudes to interprofessional learning (IPL), adapted from Curran, Sharpe and Forristall (2007); Cronbach's alpha coefficient was 0.70. Sample items included: *Inter-professional learning will help us think positively about other health care professionals*; and *Inter-professional learning before qualification will help us become better health professional team-workers*.
2. a two-item measure of motivation-to-learn, adapted from Noe and Schmitt's (1986) measure, with a Cronbach's alpha coefficient 0.76. An sample item is *I am motivated to learn the skills emphasised in the training program to benefit my future career;* and

3. a seven-item measure regarding students' perceived transfer generalisation of conflict resolution KSA, adapted from Xiao (1996); Cronbach's alpha coefficient was 0.82. Sample items included: *Since attending the IPL Resolving Conflict sessions, I have been able to use the DESC script and win/win skills at work/home;* and *The quality of my conflict resolution skills has improved since attending the IPL Resolving Conflict sessions.*

All items for these measures utilised a five-point Likert scale, with response options ranging from one (strongly disagree) to five (strongly agree). There was an adequate internal consistency of the scales, with a Cronbach's alpha coefficient of 0.7 or above which can be considered reliable (Pallant, 2005).

This study incorporated three open-ended questions to obtain more comprehensive data by using both quantitative and qualitative research methods (Brown & McCracken, 2009). These questions asked participants about their use of the conflict resolution skills learnt and to give examples; about their perceptions of learning with a different student group (IPL), and if they had anything to add regarding the sessions. Data regarding practice of the DESC script or with whom were not collected.

Data Analysis

All statistical analyses were conducted using the statistical software program, *Statistical Analysis Software* 9.4 (SAS Institute Inc., 2011). Mean values and standard deviations, or appropriate frequencies, were calculated for relevant variables. Data were analysed by means of linear regression models for most of the analyses. Assumptions of a linear model were found to be upheld in each case. For analysis of responses to the open-ended questions, a conventional

content analysis approach as outlined by Hsieh and Shannon (2005) was used. Content analysis is described as a "systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p. 1278). Analysis was conducted by two of the authors, who did not use any pre-determined categories or codes, but allowed them "to flow from the data", as recommended by Hsieh and Shannon (2005, p. 1279). Data from the third comment section, which asked if students had anything further to add, were categorised into one of two categories regarding either conflict resolution or IPL.

2.6 Results

Quantitative results are reported first[1], followed by the themes identified from the content analysis of comments on conflict resolution skills and IP. The descriptive statistics for the three variables, as well as the individual items for transfer generalisation (per student group) are presented in Table 3.

[1] Please see Appendix B for correlations between the variables, transfer, attitudes to interprofessional learning and motivation to learn.

In regards to the results of linear regression analyses, there was a statistically significant association between transfer and attitude to IPL, and between transfer and motivation-to-learn (Global P value<0.0001). For every one unit increase in the attitude to IPL score, the transfer score increased by almost one unit (estimate=0.82, 95% CI: 0.59, 1.05); and for every one unit increase in the motivation-to-learn mean score, the transfer mean score increased by just over half a unit (estimate=0.55, 95% CI: 0.44, 0.66). There was a smaller, but still statistically significant association between attitude to IPL and motivation-to-learn (Global P value<0.0001); the mean attitude score increased positively by approximately 20% (estimate=0.21, 95% CI: 0.12, 0.30) with every one unit increase in the motivation-to-learn mean score. These results support the hypothesis (H1) that there would be positive relationships between attitude to IPL, motivation-to-learn and transfer of learning.

To understand this relationship further, data were examined for confounding associations. Statistically significant associations between transfer and attitude to IPL or motivation-to-learn were found while controlling for the other variable (Global P value<0.0001). For every one unit increase in the attitude to IPL mean score, the transfer mean score increased by half a unit, controlling for motivation-to-learn (estimate=0.50, 95% CI: 0.32, 0.69). Conversely, for every one unit increase in the motivation-to-learn mean score, the transfer mean score increased by almost half a unit, controlling for attitude to IPL (estimate=0.47, 95% CI: 0.32, 0.69). As hypothesised, students with more motivation and positive attitudes to IPL tended to report higher levels of transfer generalisation of conflict resolution skills.

Variables	Nursing Students					Medical Students				
				95% Confidence Interval					95% Confidence Interval	
	n	Mean	Std Error	Lower	Upper	n	Mean	Std Error	Lower	Upper
Attitude to IPL (mean)	73	4.05	0.04	3.97	4.13	49	3.84	0.05	3.73	3.94
Motivation-to-learn (mean)	74	4.15	0.06	4.02	4.27	52	3.64	0.11	3.43	3.86
Transfer Generalisation (mean of all items)	73	3.69	0.07	3.57	3.82	52	3.29	0.07	3.15	3.44
Transfer Generalisation (individual items):	74	4.05	0.10	3.85	4.26	52	3.62	0.13	3.35	3.88
Item 1: Due to these IPL Resolving Conflict sessions, I am more aware of the different aspects (such as body language, culture & power) that are involved in resolving conflict.										
Item 2: I am more conscious and aware of different conflict resolution strategies now than before the training.	74	4.20	0.08	4.04	4.37	52	3.88	0.09	3.70	4.07
Item 3: Compared to before, I am now more comfortable dealing with conflict since attending the IPL Resolving Conflict sessions.	74	3.73	0.10	3.53	3.93	52	3.31	0.09	3.12	3.49
Item 4: Since attending the IPL Resolving Conflict sessions, I have been able to use the DESC script and win/win in my home life.	74	3.36	0.11	3.15	3.58	52	2.71	0.11	2.48	2.94
Item 5: Since attending the Resolving Conflict sessions, I have been able to use the DESC script and win/win in my workplace.	73	3.22	0.09	3.03	3.41	52	2.77	0.09	2.59	2.95
Item 6 (reversed): I have found it difficult to use what I learnt at the IPL Resolving Conflict sessions.	74	3.46	0.11	3.25	3.67	52	3.31	0.11	3.10	3.52
Item 7: The quality of my conflict resolution skills has improved since attending the IPL Resolving Conflict sessions.	74	3.80	0.08	3.64	3.96	52	3.46	0.09	3.27	3.65

Table 3: Descriptive Statistics for independent and dependent variables according to student group

In addition, a statistically significant association was found between attitude to IPL (Global P value=0.0012), motivation-to-learn (Global P value<0.0001), transfer generalisation (Global P value<0.0001) and student-group. Nursing students had approximately a 20% mean attitude to IPL score greater than medical students (estimate=0.21, 95% CI: 0.08, 0.34); as well as a mean motivation-to-learn score half a unit greater than medical students (estimate=0.50, 95% CI: 0.28, 0.73). Nursing students also had a mean transfer generalisation score almost half a unit greater than medical students (estimate=0.40, 95% CI: 0.21, 0.59). These results support the second hypothesis (H2).

To confirm that the results were not due to other possible confounding factors such as age or gender, further linear regression analyses were undertaken. A statistically significant association between transfer, attitude to IPL and motivation-to-learn, adjusting for student-group, (Global P value<0.0001 for motivation-to-learn and attitude) was apparent in the results and there was no significant association between transfer and other confounders (gender, age, which block and how many sessions students attended), whilst controlling for other covariates in the model. Hence, apart from student-group, the other variables did not mitigate or confound the relationships between the three main variables: transfer generalisation, attitude to IPL or motivation-to-learn.

Content analysis of the comments made by participants in the survey elicited interesting results, with several strong themes emerging. For example, in relation to the first comment section regarding conflict resolution knowledge and skills, four major themes emerged from participants' responses. They are ranked in order of size (*i.e.,* most common theme listed first), with examples shown in Table 4. They were:

1. Changed behaviour or self

2. Skills beneficial
3. No opportunity or difficult to use
4. No Benefit

The first theme *changed behaviour or self*, the majority of the comments were in regards to the course eliciting a change in their self-awareness or behaviour due to utilising conflict resolution skills learnt from the course. Comments were also closely associated with the second theme (skills beneficial). Students were specifically asked to practise using the DESC script, and though this proved difficult for some, they utilised other aspects of the course. For example, increased awareness of body language or personal conflict management style elicited new behaviours due to their increased self-awareness.

The second main theme, *skills beneficial*, indicated that many participants thought the skills were of practical benefit in conflict situations, including past, present and in future professional careers. Thus, several students reported they had used the skills effectively. Other students indicated that although they could see the benefit in using the framework, they hadn't had any opportunity to do so. Others mentioned the difficulty with implementing the new skills. Hence, many comments regarding the benefits of using the conflict resolution skills also mentioned a lack of opportunity, lack of confidence, or difficulty in using them which was the third main theme, *no opportunity or difficult to use.* The two themes were often intertwined. For some nursing students, the difficulty in implementing the conflict resolution skills was reported to be related to workplace power dynamics (see Table 4).

The last theme, *no benefit*, emerged from a small number of students (nine) who reported that the conflict resolution skills were of no use or benefit to them. For a few, this appeared to reflect an inner schema of conflict resolution being a part of personality; not a skill that can be

learned. This view was maintained despite the program emphasising that conflict resolution skills can be learnt and need to be practiced regularly for competency to be achieved. For others, it was viewed as a less important skill (see Table 4).

In relation to the second comment section which asked whether IPL assisted the students to utilise the conflict resolution knowledge and skills and to give examples, three major themes emerged from participants' comments (see Table 5). They were:

1. IPL: beneficial;
2. learn from different perspectives; and
3. IPL: little or no benefit

The main theme, *IPL beneficial*, related to the interactions between the two student groups and how it reflected future working relationships. This was especially so for nursing students; many of whom were on clinical placement at the time. Though one medical student commented negatively on learning conflict resolution skills, he was positive about the benefits of IPL (see Table 5).

As can be expected, intertwined with this first theme was that of *learn from different perspectives*, the second theme. Participating students often commented on the two simultaneously. Most mentioned IPL specifically and how it enabled them to "learn from" others and see a different perspective. A small number commented that the learning of different perspectives brought about a positive change in their understanding or perspective of working with other professional groups.

Although not a large number of comments regarding the theme, *IPL little/no benefit*, it is worth mentioning that for seven students, mixing with a different professional student group was

perceived as having no benefit. For others, IPL was a beneficial learning experience but did not "add" anything to learning conflict resolution skills (refer to Table 5).

Themes	Examples of conflict resolution related comments
1. *Changed behaviour or self (thinking, awareness or confidence) (n=62: 19=Medical; 35=Nursing; & 8=Unknown* students):* These comments predominantly mentioned a change in behaviours or outcomes due to utilising the conflict resolution skills; either in themselves or the other person. There was a sub-set of comments regarding an inner change (e.g., their thinking; awareness of their conflict resolution style; or increased confidence).	*"The resolving conflict sessions …. has also helped me to take time to evaluate my reactions and react appropriately to ensure a good outcome."* Nursing Student *"…. with practising the DESC script makes me more aware of why the conflict is happening & it stops me from getting as angry as I'm thinking more."* Unknown student *"It has made me more aware of the fact that other people may have different conflict resolution styles to me…it has helped me better understand past conflicts in my personal life".* Medical student *"Learning about different conflict resolution strategies [styles] has given me insight into my own approach to conflict ….Learning the DESC script gave me the confidence"* Medical student
2. *Skills beneficial (n=44: 16=Medical; 20=Nursing; & 8=Unknown* students):* These comments mention the skills learnt, often labelled "useful" or "beneficial", and gave concrete examples of the situations they have used them.	"[I have used skills] *resolving a dispute regarding a team member's allocated roles"* Nursing Student "*Previously I've been too shy to approach my supervising nurses, but now with this tool I feel that I can calmly approach them to resolve issues*" Nursing Student "*These sessions have been great in learning another aspect on how I can manage to resolve conflict. I feel now I have a clearer and soothing way I can approach a conflict situation*." Nursing student
3. *No opportunity or difficult to use (n=35: 17=Medical; 12=Nursing; & 6=Unknown* students):* These comments mentioned the difficulty of utilising the new skills or finding the opportunity to practise them; this included low confidence (to use) or that they found the skills complex or difficult to translate into practical day-to-day situations.	*"I haven't had any conflict yet so I haven't had a chance to practise the skills in a real life situation but I can see where the skills would have been useful in situations in the past*". Medical student "*I was able to use the DESC script in a modified form to compromise with my employer at my workplace. Ultimately I aimed for a win/win but instead reached a win/lose"*. Nursing Student *"The skills have enabled me with a method of how to resolve conflict, however I haven't had the opportunity yet to put this into practise and am a little nervous about doing it"* Medical student
4. No Benefit (n=9: 6=Medical; 1=Nursing; & 2=Unknown students):* These comments stated that the conflict resolution skills were of no use or benefit to them. For some, it also reflected an inner paradigm that conflict resolution skills are a part of personality, not a learnable skill.	*"…time should've been spent on increasing knowledge base rather than superficial situation resolution."* Medical student *"I think IPL is a great idea …but I don't think this conflict resolution has been very useful at all"* Medical student *"These sessions were not beneficial to me at all. Having a situation with people will never be the same as everyone's personality is different and you adjust to the people as well."* Unknown student

Students: n=90: medical n=32; nursing n=45; & unknown group n=13* students' responding to questions
** Data regarding student-group not supplied by participant*

Table 4: Themes from Comment section #1 regarding Conflict Resolution (in order of strength)

Themes	Examples of IPL related comments
1. *IPL Beneficial (n=34: 9=Medical; 20=Nursing & 5=Unknown*):* These comments mention that they believed interactions between the two student groups were beneficial in light of future professional career collaborations and the present, as students. A sub-theme was how the interprofessional learning would assist specifically in dealing with conflicts with other professional groups.	*"These sessions have been really great to interact with the med students as teamwork between nurses and doctors is necessary in the workplace"* Nursing student *"IPL has been a good tool to meet students in other aspects of healthcare and open the door early on in both people's careers to cross discipline capacities. It has assisted my confidence in dealing with interns, etc* [on placement]". Nursing student *"I think it's useful to interact with other healthcare professionals before clinical practise. The experience of exposure & interaction with other professions has assisted me in I feel more prepared to interact later on, as a med student we often tend to be quite insular, and only interact with other med students"* Medical student *"Hearing examples of conflict from nursing students was helpful in considering the value/real-life application of the skills learnt in these sessions"* Medical student
2. *Learn from different perspectives (n=20: 10=Medical; 7=Nursing & 3=Unknown*):* Most mentioned IPL specifically and how it enabled them to "learn from" others and see a different perspective. A small sub-theme was that the learning of different perspectives brought about a positive change in their understanding or perspective of working with other professional groups.	*"Interprofessional learning has helped to widen my perspective on workplace conflict by going at it in various ways. It has been interesting to learn with medical students"* Nursing student *"IPL has been helpful to learn about issues from other professions' point of view and means of appropriate communication"* Nursing student *"It allows us to learn from each other which is crucial in future career because doctors and nurses work hand in hand in the hospital. It allows us to see the conflicts from different perspectives"* Medical student *"In the classes we simulate an actual hospital setting but never having done placement I do not fully appreciate nurse/doctor relationships and how they function. I feel like this would be beneficial to help truly simulate the relationship and conflict"* Medical student
3. *IPL: little or no benefit (n=7: 5=Medical; 2=Nursing):* These comments were in relation to interprofessional learning either as of no benefit or did not "add" anything to learning the topic of conflict resolution. A few commented that it would have been more beneficial to learn within their own student groups only.	*"The skills learnt were/will be useful in our future careers but I don't think its necessary vital to do it with medical and nursing students combined. I feel like there is still a divide between the two."* Nursing student *"I don't think this topic necessarily required interprofessional learning, I think it would have been appropriate to teach individually."* Medical student *"I don't think the fact that the sessions are combined* [with] *the nursing students has impacted on my ability to learn in these sessions either positively or negatively"* Medical student

Total students that responded to IPL comment question n=60: medical n=24; nursing n=27; & unknown n=9* students

** Data regarding student-group not supplied by participant*

Table 5: Themes from Comment section #2 regarding Interprofessional Learning (IPL) (in order of strength)

2.7 Discussion

Within the context of an undergraduate IPL conflict resolution program, two important areas of research were examined in this study. These were interprofessional learning (IPL) and training transfer.

As hypothesised, students with more motivation and positive attitudes to IPL tended to report higher levels of learning and generalisation of conflict resolution skills. This finding has high face validity. This finding was also supported by the high incidence of comments with examples of skill utilisation; and from the dominant themes that emerged in relation to the benefits of IPL and learning conflict resolution skills. It is also consistent with Simmons *et al.* (2011) qualitative study; that participants' positive perceptions of IPE most likely influenced their intent to change future behaviour regarding applying (*i.e.*, transferring) their learning. Although this is the first study of its kind examining attitudes to IPL, motivation-to-learn and transfer generalisation of conflict resolution skills concurrently, the results are consistent with those reported in studies that have examined motivation-to-learn and transfer. For example, Colquitt *et al.,* (2000) in their meta-analysis on motivation-to-learn and its relationship with training outcomes, found that motivation-to-learn was consistently positively correlated with declarative knowledge, skill acquisition, transfer of learning, and post-training job performance.

As hypothesised, nursing students reported more motivation-to-learn, had a more positive attitude to IPL and rated their transference of conflict resolution skills higher than did medical students. Although at the time of this study, other comparative studies did not exist, this finding is supported by studies that have examined attitudes to IPL. For example, Curran *et al.* (2008) cite several studies that report medical students and postgraduate medical residents as holding significantly less positive attitudes towards interprofessional collaboration than students from

other professions, including nursing, pharmacy and social work. Hertweck *et al.* (2012), in their study comparing physician assistants with other health professionals, found that this group valued interprofessional collaboration significantly less than the others. They attributed the result to physician assistants being educated on a medical model.

Interestingly, Curran *et al.* (2007) found that medical faculty members reported significantly lower attitudes towards IPE, IPL and interprofessional teams than nursing faculty members, in an academic setting. These authors argued that faculty attitudes are an important influencing factor in the development of IPE curriculum. Faculty members may also be an influencing factor regarding their student cohorts' attitudes to IPE. "Us versus them" attitudes from professional socialisation are part of the explanation for poor interprofessional relationships and collaboration (Zwarenstein & Reeves, 2006).

Alternatively, medical students' less positive attitudes to IPL may be due to the course subject-matter. Consistent with previous research, medical students surveyed may hold a more traditionalist medical view that conflict resolution skills are a "soft skill" as opposed to clinical skills which are viewed as "hard skills" (Jelphs, 2006); the former seen as less important. This view was echoed in a medical student's comment *"…time should've been spent on increasing knowledge base rather than superficial situation resolution. Building clinical skills together would be much more worthwhile.*" Hence, despite evidence indicating that improvement in "soft" skills such as communication, conflict resolution and interprofessional collaboration can have the greatest impact on effective healthcare delivery (Jelphs, 2006), socialisation influences (e.g., family or institutional culture) (Jelphs, 2006) may be reflected in the medical undergraduates' responses.

Although this study found a difference between the two student groups, the reasons for the difference can only be speculated. However, two major differences between the students were in regards to their degrees: clinical placements versus no clinical placements; and proportion of degree completed. At the time of the IPL training, nursing students had completed two thirds of their degree as well as a maximum of 885 total clinical placement hours. In comparison, medical students had completed only one third of their degree and no clinical placements. Hence, the contextual framing of the learning undertaken through the IPL conflict resolution program was more relevant for nursing students than medical students. The learning and conflict examples were framed in a healthcare context (e.g., hospitals) in which medical students had no experience.

Survey comments reflected this difference; as evidenced by the theme *No Benefit*; the majority of these comments were made by medical students. Comments made during the sessions by medical students also reflected feeling disadvantaged by their lack of understanding and practical knowledge of the healthcare system. This was evidenced by conflict examples cited in surveys which tended to be of a personal nature; whereas nursing students tended to cite conflict examples experienced while on clinical placement. This is also supported by medical students' comments regarding learning about the hospital setting from nursing students.

Supporting this interpretation is the marked difference in attendance between nursing and medical students; which markedly reduced for medical students as the blocks of programs progressed. In the last session of the semester, only five medical students attended out of 34 enrolled, in comparison to 35 nursing students out of 47 enrolled. However, this decrease could also reflect differences in attendance grade-weighting. Nursing students attained 5% of marks (non-graded pass) for specific attendance to the IPL conflict resolution program; whereas medical students were required to achieve an average of 95% attendance over all their semester courses

(also for 5% non-graded pass). Also, nursing and medical students' end-of-year exams were in the week following Block 4's final session which may account for some reduction in attendance for that particular block. This may reflect a traditional emphasis on exams and academic achievement which is consistent with the findings of Barr, Helme and D'Avray (2014). They found in their review of IPE in the United Kingdom that students valued IPE more when it was assessed. The authors highlighted that in the absence of summative assessment or credit towards grades, IPE was given lower priority by students and teachers; as may be the case in this study.

The differences between undergraduate degree structures and clinical placement opportunities in relation to IPL conflict resolution skills have not been examined previously. Similarly, the opportunity for students to use skills taught or the delay between course delivery and career commencement has not been fully explored thus far. This study appears to be the first to do so. Though both student groups in this study indicated that IPL was worthwhile, there was a distinct difference in attitudes to IPL, motivation and transfer generalisation between them; with nursing students consistently more positive and motivated than medical students. Reilly *et al.* (2014) recommended standardisation of learning by ensuring that undergraduate students are from the same level of training. Though the students in this study were all second year level, they were essentially at different stages because of inherent structural differences in their degrees. The implications of these differences need to be considered.

The results of this study suggest that contextual relevancy of professional interpersonal skills is important. A delay in its introduction may be warranted to ensure relevancy of learning skills is in step with students' clinical placements. This is contrary to studies that found that IPE should start as soon as possible in undergraduate education (Hayashi *et al.*, 2012; Hawkes *et. al.*, 2013). Hence, it is important to clarify what the objectives are for each IPL course. If the

objective is attitude change, then early introduction may be best. However, if the objectives are based on skill development, then contextual relevancy is important and delay may be beneficial.

Limitations

In relation to study limitations, attitudes to IPL, motivation-to-learn and transfer generalisation were examined post-training in one IPL cohort only, with limited data collection of skill practice (e.g., amount, with whom, or type of conflict). To improve methodological vigour, a multi-institution pre/post-training design could be conducted with a larger sample to replicate these results over different cohorts/years, with more precise data collection regarding skill practice. As Zwarenstein, *et al.* (2005) suggest, IPL research over longer periods is required to evaluate any behavioural change sustainability (*i.e.*, maintenance) of undergraduates' competencies as they progress into their professional careers.

Another limitation is that the study utilised a survey as its only form of data collection which was predominantly Likert-scale self-report. Although participants were able to comment on different aspects of the IPL conflict resolution program, expand on reasons and give examples, it may be argued that there were self-report biases, influence of question order or response alternatives (Schwarz, 2004). However, self-report surveys provide an acknowledged method of gaining access to people's attitudes and motivations that cannot be observed and is a dominant, acknowledged data collection method in the social-sciences (Schwarz, 2004).

Future Research

Future IPL research needs to incorporate knowledge from the training transfer literature; with emphasis on measuring factors found to influence transfer, such as motivation-to-learn, relevancy and opportunity to use. This is especially necessary in regards to conflict resolution

skills which are essential for healthcare professionals and require ongoing research, education and team development (Brown *et al.,* 2011). Also, future combined IPL and training transfer research needs to examine the contextual relevancy of the subject matter to undergraduate healthcare students, taking into account not only their year level, but also clinical placement opportunities. Ideally, longitudinal follow-up of undergraduates when they commence their professional careers and the impact of transferred skills to clinical practice should occur. Lastly and importantly, factors that may influence undergraduates' perspectives and attitudes to learning need to be examined. For example, the potential influence of academic or institutional culture on attitudes and motivation to learn soft skills on their student cohorts.

2.8 Conclusion

This study brought together the research areas of interprofessional learning and training transfer in the context of second year undergraduate nursing and medical students learning conflict resolution skills. Many factors can influence the transfer of learning to clinical practice. However, when there is a delay between learning and being able to utilise the skills as a new professional, this can only inhibit the integration of these skills into one's habitual repertoire. This is compounded when the contextual relevancy of clinical placement at the time of learning is missing; meaning new conflict resolution skills are less likely to transfer to their professional career. Although conflict resolution skill development is extremely important for undergraduates, it is important to evaluate course effectiveness in light of current interprofessional learning and transfer research.

Chapter 3: Factors that influence the transfer generalisation and maintenance of conflict resolution programs of healthcare training and development units: a retrospective study.

3.1 Statement of Authorship

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Sonya Vandergoot, first author, PhD Candidate
This paper reports on original research Sonya Vandergoot conducted during the period of her Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. Sonya Vandergoot is the primary author of this paper. She was responsible for the conception of this study, literature review, developing the research aims and hypotheses and data collection and analyses; and wrote up the manuscript. Sonya Vandergoot was the first author and corresponding author for the manuscript and was primarily responsible for revisions to the paper. Her overall percentage of contribution to the paper is 85%.

Dr Aspa Sarris and Dr Neil Kirby were the PhD supervisors and contributors of the research program to which this manuscript belongs. They collaborated with Ms. Sonya Vandergoot on the development of the content and structure of the manuscript and assisted with editing and proof reading. Ms. Vandergoot was responsible for the conceptualisation of the research aims and hypotheses, literature review, statistical analysis and write-up of this manuscript. Their role was to discuss the feasibility of her research proposals, provide support and assistance when she encountered difficulties and to provide feedback and editing on manuscript drafts. They give permission for this paper to be incorporated in Ms. Vandergoot' submission for the degree of Doctor of Philosophy from The University of Adelaide.

NB: Please refer to Appendix A for a copy of the signed (original) version.

3.2 Preamble

The second study examined conflict resolution skills; again, to address the paucity of training transfer research in this area. Following on from study one which examined transfer generalisation, this second study examined both transfer generalisation and maintenance of conflict resolution skills to the workplace, retrospectively.

The sample from study one comprised undergraduate university students who had yet to commence their professional careers. This second study sampled participants who were already working in their chosen profession. The sample included medical officers and other health professionals, including nurses and allied health. All participants had completed relevant training programs from one of two healthcare training and development units within the previous three years. Due to the more homogeneous nature of the medical officers' sample and their training, it was hypothesised that they may report greater training transfer.

This study drew upon current training transfer research and examined factors that influence training transfer. Individual factors examined were self-efficacy, intrinsic motivation, motivation-to-learn, motivation-to-transfer, organisational commitment and emotional intelligence. Organisational factors examined were opportunity-to-use, organisational support systems, social and goal-setting cues, and perceived supports and barriers to training transfer.

This study addressed the main aim of this thesis: to examine the two phases of training transfer, generalisation and maintenance, concurrently, and the factors that influence them, in relation to conflict resolution knowledge and skills. Results from this study may contribute to further understanding by confirming whether generalisation and maintenance may occur concurrently and if they are influenced to a greater or lesser extent by different combinations of individual and/or organisational factors.

This information may be used by organisational training and development units in the design and delivery of conflict resolution programs to promote the development of individual factors during training, such as self-efficacy and motivation. It may also have implications for organisations regarding how to support employees on their return to work after training. The relative importance of different organisational transfer climate factors to transfer generalisation compared to maintenance of KSA may assist organisations to enhance transfer of training.

3.3 Abstract

Conflict resolution skills are important for all healthcare professionals. Conflict and miscommunication can have detrimental effects on decision-making, potentially impacting on patient-care, morbidity and mortality; making upskilling of health professionals' conflict resolution skills important. However research suggests only around 10-15% of training knowledge and skills transfers to the workplace, making training a seemingly poor investment.

Via an on-line survey, this study examined factors associated with the transfer generalisation and maintenance of conflict resolution skills of medical officers and healthcare professionals who undertook relevant training within the previous three years. The results of multivariable linear regression analyses showed that approximately 77% of the variance was predicted for transfer generalisation and 42% was predicted for transfer maintenance by the individual factors of emotional intelligence and motivation; and organisational transfer climate factors of perceived support and goal-setting cues. These results have implications for healthcare organisations in terms of how they motivate and

support staff before and after training to increase transfer generalisation and maintenance of conflict resolution skills.

3.4 Introduction

Conflict resolution skills are important for all healthcare professionals. Conflict and miscommunication in healthcare settings can have detrimental effects on decision-making; potentially impacting on patient-care, morbidity and mortality. It is therefore important to upskill health professionals' conflict resolution skills. For example, research on decisions to limit life-sustaining treatment in intensive care units found conflict in 78% of 102 consecutive cases. Forty-eight percent of cases were identified as clinician-family conflict and 48% of cases were identified as clinician-clinician conflict (Back & Arnold, 2005; Katz, 2007). Back and Arnold (2005) also cited an informal poll of physician executives who indicated that they spent "at least 20% of their time dealing with conflict" (p. 1375). Gilin Oore *et al.* (2015) concur, reporting that business managers and leaders in Canadian organisations spend an average of 7.5 hours between direct interventions on, and worrying about, workplace conflict every week. On top of this, research suggests that workplace conflict is most likely under-reported (Back & Arnold, 2005).

According to Gilin Oore *et al.* (2015), poorly-handled work-place conflict is common and costly in both economic and social terms. Research has shown that teams with high relationship conflict tend to have greater staff turnover, absenteeism, work dissatisfaction and reactivity to job stressors, as well as lower team productivity, in comparisons to teams with lower relationship conflict (Gilin Oore *et al.,* 2015). In a review of conflict communication causes, costs, benefits and interventions in nursing, Brinkert (2010) identified several effects of conflict including burnout, quoting 33% of intensive care nurses in France had severe burnout syndrome associated

with conflict. Costs of nurse-physician conflict included subsequent medication errors, patient injuries and patient deaths (Brinkert, 2010). In his review, Brinkert (2010) also highlighted other costs of conflict in healthcare, including direct costs of litigation, lost management productivity, employee turnover, disability and worker compensation claims, regulatory fines, increased care expenditures to handle adverse patient outcomes and intentional damage to property. Indirect costs of conflict included individual emotional impairment and damage to team morale, costs to patients, and increased incidence of disruptive behaviour by organisational personnel (Brinkert, 2010).

Conflict resolution training has the potential to improve the communication skills of healthcare staff. However, there is a lack of research evaluating its effectiveness in healthcare settings, including the extent to which skills learnt are transferred to the workplace (Lee *et al.,* 2008). Transfer of training is defined as the effective and continuing application of KSA learned or acquired from training to the workplace with subsequent generalisation and maintenance of these KSA (Baldwin & Ford, 1988).

In healthcare workplaces, transfer of learning is particularly important because of the risk to patient health caused by preventable medical errors. Errors account for up to 98,000 patient deaths and costs of $17-$29 billion per year in the US alone (Gitonga, 2007). Yet several researchers (e.g., Gitonga, 2007; Lee *et al.,* 2008; Zweibel *et al.,* 2008) highlight that little is known about whether the conflict resolution skills taught in healthcare are subsequently transferred to (*i.e.,* utilised in) healthcare. Other transfer of learning studies quote only a 10-15% return on investment in work-performance of the billions-of-dollars spent world-wide on staff training and development (Baldwin & Ford, 1988; Gitonga, 2007; Kontoghiorghes, 2002); making training a seemingly poor investment.

Training effectiveness is not only about the training content and the quality of the training methods used (Ascher, 2013), but also relies on other factors such as the trainees' ability and motivation, and the organisational environment and transfer climate before, during and after training to support effective transfer of learnt knowledge and skills to the workplace (Baldwin & Ford, 1988; Chiaburu *et al.*, 2010; Thayer & Teachout, 1995). Key factors that have been identified include trainee motivation, including intrinsic motivation, motivation-to-learn and motivation-to-transfer (Colquitt *et al.*, 2000; Gegenfurtner *et al.*, 2009a; Noe & Schmitt, 1986; Sankey & Machin, 2014); self-efficacy (Gegenfurtner *et al.*, 2009b); organisational commitment (Daffron & North, 2006); opportunity to use the skills learnt (Holton *et al.*, 2000) and the organisational climate that may support or inhibit the transfer of learning to the workplace (Chiaburu *et al.*, 2010; Holton *et al.*, 1997; Thayer & Teachout, 1995). Ascher (2013) explains that the work-environment and its transfer climate include the actions, situations or consequences that encourage or prevent the transfer of training KSA to the workplace. Holton *et al.* (1997) suggest that these are mediating factors between the organisational context and an individual's attitude towards their workplace, which then encourages or discourages the utilisation of new skills.

Research suggests that healthcare organisational climate may be part of the issue of how healthcare workers resolve conflict. Zweibel *et al.* (2008) point out that systemic problems in healthcare settings, such as time and resource pressures, hierarchies within and between several healthcare professions; intergenerational differences in perceptions of what knowledge and skills are important, and physicians' preference for autonomy, are aspects of organisational culture and climate that all have the potential to increase conflict. Kaufman (2011) concurs and argues that conflict is inevitable due to these healthcare system issues. Hence a better understanding of how

organisational climate influences the transfer of newly acquired conflict resolution skills is needed.

One factor that has not been studied in relation to the transfer of conflict resolution skills, yet has been consistently found to be important and associated with these skills (Jordan & Troth, 2002), is emotional intelligence (EI). Goleman (1995) defines EI as the ability to be aware of, and engage with, one's own and others' emotions constructively. Wong and Law (2002) outline different dimensions of EI: being able to appraise, express and regulate one's own emotions, appraise and recognise emotions in others, and being able to use emotions effectively and constructively.

High EI allows people to engage in interpersonal interactions such as conflict more competently (Schreier, 2002). EI theorists suggest that highly emotionally intelligent individuals will have superior conflict resolution skills, engage in greater collaboration and adopt a range of conflict resolution styles adaptively according to the situation in comparison to individuals with low EI (Jordan & Troth, 2002). These findings are supported by a study by Ayoko, Callan, and Härtel (2008) which found that teams that were less able to manage their emotions reported more conflict as well as higher conflict intensity. They also found that teams in conflict but with lower levels of team EI reported more destructive reactions to conflict.

Some researchers have argued for the need to incorporate EI skills in conflict resolution training as a way of improving organisational interpersonal skills or improving transfer of conflict resolution skills (Dearborn, 2002; Jordan & Troth, 2002). However, the impact of EI on training transfer has not been examined despite many studies into EI and conflict management (refer to meta-analysis by Schlaerth *et al.*, 2013).

This retrospective study was conducted to examine the transfer generalisation and maintenance of conflict resolution skills from training programs conducted by two Australian healthcare training and development units, targeting primarily nurses and medical registrars. The aim was to explore which individual, training and organisational factors influence the transfer generalisation and maintenance of conflict resolution skills in the context of healthcare. Based on the above research, it was hypothesed that:

Individual factors measured (*i.e.,* self-efficacy, emotional intelligence, intrinsic motivation, motivation-to-learn, motivation-to-transfer, and organisational commitment) will be positively associated with transfer generalisation and maintenance (H1);

The length of training (training factor) will be positively associated with transfer generalisation and maintenance (*i.e.,* as hours of training increase, reported levels of transfer generalisation and maintenance will increase) (H2);

The time since training was completed (training factor) will be negatively associated with transfer generalisation and maintenance (i.e., as more time passes since training was completed, the level of reported transfer generalisation and maintenance levels will decrease) (H3); and

Organisational climate factors measured, such as opportunity-to-use, organisational support systems, social cues and goal-setting cues, will be positively associated with transfer generalisation and maintenance (H4).

3.5 Methodology

This study utilised a retrospective cross-sectional design to examine the transfer generalisation and maintenance of conflict resolution skills of healthcare professionals from training completed within the past three years. All staff who had completed the eligible training in that time were emailed by the respective training unit on behalf of the researchers. An information sheet explaining the study was included in correspondence. Participants were asked to complete an online survey on the conflict resolution program/session they had attended. Consent was obtained as part of the online survey process. Email reminders regarding survey completion were sent twice following the original email. For the Professions group, on receiving feedback from the organisation regarding low staff usage of work emails, hard-copy surveys were posted out to all eligible participants with addresses on file.

Ethical Considerations

Participants received information about the nature of the study. They were informed that responses would be confidential and only group results would be reported. No incentive to participate in the study was offered to participants. The research project was approved by the Healthcare organisation's Human Research Ethics Committee and endorsed by the University of Adelaide's Human Research Ethics Committee. Governance approval to proceed with the research project was also received from each of the relevant organisational healthcare sites.

Conflict resolution training programs

Training programs on conflict resolution offered by two Australian public healthcare training and development units were included in this study. The two training units offered training to different staff within the same Australian healthcare system. One targeted the medical

profession (e.g., medical registrars) and the other targeted predominantly nurses, although allied health, administration and corporate learners were also able to access some of these programs. For clarity, the participants from the first unit will be referred to as Medical and those from the later as Professions.

Conflict resolution training duration varied from 2.5 hours to five days, dependant on whether it was a stand-alone conflict resolution training or a component of a larger program. The longer training courses (two to five days) tended to be programs that included a conflict resolution component. For example, one of the training programs included in the study was a five-day nursing leadership program which included a three hour conflict resolution component.

Three training programs offered to registrars (Medical group) were included in this study. These were:

- *Professional Development Program for Registrars* (PDPR). This was a 2.5 hour conflict resolution component within a two day program (n=111);
- *Next Steps.* This was a 2.5 hour conflict resolution component within a one day program) (n=14); and
- *Managing Workplace Conflict.* This was a 2.5 hour conflict resolution program (n=13).

Note that the *Next Steps* program was only offered to medical officers and registrars who had completed the *PDPR.*

Training programs included in this study that were offered to the Professions group were as follows:

- *Conflict resolution in the workplace* (1 day) (n=36);
- *Respond effectively to difficult and challenging behaviours* (3 hours) (n=95);

- *Leadership and management for Registered Nurses - level 2.* This included a three hour conflict resolution component in the four-day program (n=96);
- *Leadership and management for Registered Nurses - level 3.* This included a three hour conflict resolution component in the five-day program (n=20); and
- *Enhancing positive team culture* (3 hours) (n=93).

Participants

Eligible participants were staff who had completed one of conflict resolution training components or programs outlined above and were contacted by either email or letter (*i.e.*, Medical n=133 emailed from original 138 cohort; Professions n=328 emailed from an original cohort of 340; plus hardcopy surveys posted n=329 from the cohort of 410 which included recently completed program attendees not emailed before; 81 participants did not have a postal address on file).

A total of 64 learners (Medical: n=18; Professions: n=46) participated in the study; however only 41 surveys (Medical: n=12; Professions: n=29) were able to be analysed quantifiably due to data omitted from surveys. This was because 23 participants did not complete any item measures. Of the Professions group, 39 were nurses (61%), four were allied health professionals (6%) and two were administrative staff (3%); with one person of an unknown profession (2%).

The Medical group (n=11) ranged in age from 28 to 52 years old, with a mean age of 34.9 years (SD 6.93). The Professions group (n=29) ranged in age from 24 to 65 years, with a mean age of 43.7 years (SD 11.6). Table 6 provides demographic information categorised by group for the quantitative data analyses (n=41).

The response rate was low at approximately 14% of those contacted successfully (n=462); plus a large proportion of these surveys were not completed fully (36%). This response rate was not unexpected as both units had advised prior to the surveys being sent to expect a low response rate on the basis of their previous general experience with staff surveys, which internally averaged at five percent.

Data collection

The survey was generated online through the *Survey Monkey* website. It asked questions in relation to the individual, their work-role and the training as well demographic questions such as age, gender, education level, work role (job title, level and department), employment status (full-time, part-time or casual), and geographical work location (metropolitan area, regional or rural). It also asked about the conflict resolution training attended such as its duration (number of hours), date when attended, who training was organised by and the reason for attending the training.

The survey consisted of several individual and organisational measures. All measures utilised a seven-point Likert scale, with response options ranging from one (strongly disagree) to seven (strongly agree). The individual and organisational measures were as follows:

New General Self-Efficacy Scale is an eight-item measure developed by Chen *et al.,* (2001). A sample item is *I will be able to achieve most of the goals that I have set for myself.* The Cronbach's alpha coefficient in this study for the Professions group was 0.92 and for the Medical group was 0.93.

Wong and Law Emotional Intelligence Scale (WLEIS) is a 16-item measure of EI developed by Wong and Law (2002). It has four subscales, each comprised of four items. They are named:

- self-emotional appraisal (EI:SEA),
- others' emotion appraisal (EI:OEA),
- use of emotion (EI:UOE), and
- self-regulation of emotion (EI:ROE).

A sample of an EI:SEA item is *I really understand what I feel*. An EI:OEA item sample is *I am a good observer of others' emotions.* An EI:UOE item sample is *I always tell myself I am a competent person,* and a sample of an EI:ROE item is *I have good control of my own emotions*). The Cronbach's alpha coefficient in this study for the subscales were as follows: Professions group was 0.91, 0.94, 0.82 and 0.92 respectively; and for the Medical group was 0.92, 0.76, 0.80 and 0.80 respectively.

Intrinsic motivation is a three-item measure developed by Guay, Vallerand and Blanchard (2000). An item sample is *I think training and development opportunities are interesting.* The Cronbach's alpha coefficient for the Professions group was 0.80 and for the Medical group was 0.86.

Motivation-to-learn is a three-item measure adapted from Noe and Schmitt's (1986) 8-item measure. An item sample is *I try to learn as much as I can when I attend training*. Cronbach's alpha coefficient for the Professions group was 0.84 and for the Medical group was 0.94.

Motivation-to-transfer is a two-item measure adapted from Noe and Schmitt's (1986) 8-item measure. An item sample is *I believe the skills I learned in the conflict resolution training*

would be helpful in solving work-related problems. The Cronbach's alpha coefficient for the Professions group was 0.83 and for the Medical group was 0.94.

Organisational Commitment Questionnaire (OCQ) short version with nine positively-worded items, developed by Mowday *et al.,* (1979) was utilised. Mathieu and Zajac (1990) in their meta-analysis of research utilising the OCQ, found that 80 studies reported an average internal consistency reliability of 0.882 (SD = .038). An item sample is *I find that my values and the organisation's values are very similar.* The Cronbach's alpha coefficient for this study for the Professions group was 0.84 and for the Medical group was 0.81.

Organisational Transfer Climate: Positive Work Environment measure is comprised of three subscales; the sub-scale *Social Cues* (OTC: Social cues) was utilised in this study. This is a 10-item measure developed by Thayer and Teachout (1995). An item sample is *When staff return from training, supervisors encourage them to share what they've learned with other staff*. The Cronbach's alpha coefficient for this study for the Professions group was 0.95 and for the Medical group was 0.93.

Organisational Transfer Climate: Positive Work Environment measure sub-scale *Goal-setting* (OTC: goal-setting) was utilised in this study. It is a six-item sub-scale, developed from Thayer and Teachout (1995). A sample item is *Managers set goals for employees that encourage them to use new training.* The Cronbach's alpha coefficient for this study for the Professions group was 0.86 and for the Medical group was 0.79.

Opportunity-to-use (OTC: opportunity-to-use) is a five-item measure developed for this study, based on the work of Holton *et al.,* (2000) and Thayer and Teachout (1995). An item sample is *I consciously allocated time to practice new skills/strategies learnt in the conflict*

resolution training. The Cronbach's alpha coefficient for this study for the Professions group was 0.72 and for the Medical group was 0.80. See Appendix C for all the items in this measure.

General Training Climate Scale subscale: *Organisational Support* (GTCS: Org Support) measure, with five-items, was utilised in this study. It was developed by Tracey and Tews (2005). One sample item is *There is a performance review and development system that ties recognition and rewards to use of newly acquired knowledge and skills*. In this study, the Cronbach's alpha coefficient for the Professions group was 0.81 and for the Medical group was 0.80. This measure will be referred to as Organisational Support Systems to distinguish it from other types of support that may be discussed.

Transfer generalisation (transfer) is a five-item measure assessing participants' transfer of learning of conflict resolution KSA; adapted from Xiao's (1996) six-item measure. A sample item is *The quality of my conflict resolution skills has improved since attending the training* and *I have found it difficult to use what I learnt at the training in my workplace* (reverse scored). The Cronbach's alpha coefficient in this study averaged at 0.93 for the two groups (Professions 0.91 and Medical 0.95).

Transfer maintenance (maintenance) is a four-item measure developed for this study. It assesses participants' maintenance of learning of conflict resolution KSA since attending the training. The items were adapted from Xiao's (1996) training transfer measure. Samples items included in the scale are *Since attending the conflict resolution training, I have been able to continue using the conflict resolution strategies I learnt* and *Since attending the conflict resolution training, I have returned to old ways of dealing with conflict* (reverse scored). See Appendix C for all the items in this measure. Cronbach's alpha coefficient in this study averaged at 0.79 (Professions group was 0.63 and Medical was 0.95).

Participants were also asked to respond to two questions to determine their perceptions of support or barriers for transfer generalisation and/or maintenance. The question(s) were: "*Were there any enablers/barriers (either in regards to yourself or your workplace) that assisted/impeded your ability to use and/or maintain the conflict resolution skills in your workplace?"* Respondents were asked to respond 'yes' or 'no' to each question and to give examples. As the majority of examples given were organisational for both questions, these variables have been treated as organisational factors.

There was an internal consistency across the scales in this study, with a Cronbach's alpha coefficient generally 0.7 or above and hence the measures can be considered reliable (Pallant, 2005). The survey also incorporated ten questions/comment sections asking participants about their motivation, reasons for attending, examples of utilising their learning and of being able to maintain it; and if they received support or encountered any barriers, and examples thereof. These comments were included to elicit more comprehensive and holistic data. As Brown and McCracken (2009) stated, this is more likely when both quantitative and qualitative research methods are utilised.

Data Analysis

All statistical analyses were conducted using the statistical software program, *Statistical Analysis Software* 9.4 (SAS Institute Inc., 2011). Mean values and standard deviations, or appropriate frequencies, for all measures were calculated. Descriptive statistics (by group) for categorical independent variables are presented in Table 6 and continuous independent variables are presented in Table 7. Variables that are not normally distributed (majority were negatively-skewed), have the median and interquartile range (Q1, Q3) reported (see Table 7). Assumptions

of a linear regression were found to be upheld for all linear regression models with the outcome variables, transfer generalisation (mean) and training maintenance (mean)[2].

For analysis of responses to the open-ended questions, a conventional content analysis approach, based on the method outlined by Hsieh and Shannon (2005) was used; by "systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p1278). Content analysis was conducted by the first author and consequently checked individually by the other authors, with agreement reached.

Power

In regards to detecting a difference between the two professional groups (Professions and Medical), there is power of 80% (where alpha=0.05) to detect a clinically significant difference of 0.13 for the transfer generalisation variable and a clinically significant difference of 0.15 for the transfer maintenance variable, between the two groups.

3.6 Results

Results of the quantitative data analyses are reported first, followed by the themes identified from the content analysis of the comment sections elicited from the surveys. Table 6 shows the descriptive statistics for both groups and the independent categorical variables. Note

[2] Please see Appendix B for correlations between the variables in this study.

that due to the small sample, not all demographic information is reported to avoid inadvertent identification of any participants.

Variables	Professions n (%)	Medical n (%)	Missing* n
Gender: female	25 (86.2)	5 (41.7)	0
male	4 (13.8)	7 (58.3)	0
Education: Bachelor degree or above	22 (75.9)	12 (100)	0
Employment Status:			
Full-time	21 (72.4)	10 (83.3)	0
Part-time	7 (24.1)	2 (16.7)	0
Other	1 (3.5)	0 (0)	0
Support:			4
yes	14 (53.9)	2 (18.2)	
no	12 (46.1)	9 (81.8)	
Barriers:			3
yes	9 (34.6)	5 (41.7)	
no	17 (65.4)	8 (58.3)	

n=41
* Data not supplied by participant(s)
Note: this descriptive data relates only to quantitative data analyses

Table 6: Descriptive statistics for independent categorical variables

Multivariable linear models were performed for the two dependant variables, transfer generalisation (transfer) and maintenance. All individual factors with a P value<0.2 in a univariate model versus transfer (*i.e.*, emotional intelligence SEA, OEA and ROE; motivation-to-learn; intrinsic motivation; and motivation-to-transfer) were included in an initial individual factor multivariable model. The professional variable (Professions/Medical) was included no matter what its P value, as an a priori variable. Backwards elimination was performed manually until all covariates had a P value<0.2. This is Model 1 in Table 8: a final multivariable linear regression of transfer versus individual factors.

Training factor variables (*time since training* and *training duration*) were then added and backwards elimination performed again until P values<0.2. This is Model 2 in Table 8: a final

multivariable linear regression of the transfer variable versus individual and training factors. Note that the adjusted R_2 remained basically unchanged after these factors were added to the model.

Organisational variables with P value<0.2 (*i.e.,* support, barrier, organisational transfer climate measures of social cues, goal-setting, and opportunity-to-use, and organisational support systems) were then added and backwards elimination performed manually until P values<0.1. This is Model 3 in Table 8: a final, most parsimonious multivariable linear regression model of transfer versus individual, training and organisational factors. Adjusted R squared values are also shown for each model.

Variables (mean)	Professions (n=29)						Medical (n=12)					
	n	Mean	Std Dev	Median	Interquartile Q1	Q3	n	Mean	Std Dev	Median	Interquartile Q1	Q3
Training Transfer	27	4.95	1.23				10	5.08	1.10			
Training Maintenance	27	4.91	0.95				10	4.90	1.37			
Length of training (hours)	28	5.27	1.84	6.00	3.50	6.00	12	1.42	0.97	1.00	1.00	1.00
Time since training (mths)	28	9.73	5.55	10.00	5.00	13.0	12	16.53	9.03	17.54	10.17	20.00
Self-efficacy	29	6.12	0.67	6.10	5.90	6.60	11	6.05	0.69	6.00	5.80	6.50
EI: SEA	29	6.02	1.01	6.00	5.50	6.80	11	5.11	1.21	5.50	3.50	6.00
EI: UOE	29	5.99	0.79	6.00	5.30	6.80	11	4.99	1.01	5.00	4.80	6.00
EI-OEA	29	5.72	1.09	6.00	5.30	6.50	11	5.38	1.01	5.80	4.50	6.30
EI-ROE	29	6.01	0.89	6.00	5.50	7.00	11	5.48	0.91	5.30	5.00	6.00
Intrinsic Motivation	29	6.17	0.68	6.00	6.00	6.70	11	5.98	0.82	6.30	5.30	6.30
Motivation-to-learn	29	6.23	0.68	6.30	6.00	6.70	11	6.20	0.76	6.30	6.00	7.00
Motivation-to-transfer	29	6.26	0.93	6.50	6.00	7.00	11	6.05	1.04	6.00	5.50	7.00
OCQ	29	5.96	0.78	6.10	5.20	6.40	11	5.26	0.89	5.20	4.80	6.00
OTC: social cues	29	4.91	1.24	5.10	4.10	5.90	11	4.75	1.23	4.80	4.30	5.70
OTC: goal-setting	29	4.45	1.05	4.50	4.00	5.20	10	4.59	0.95	4.45	3.70	5.70
OTC: opportunity-to-use	29	3.92	1.15	4.00	3.60	4.80	10	4.10	1.24	4.40	3.00	5.20
GTCS: Org. Support	28	4.49	1.15	4.60	4.10	5.30	10	4.88	1.14	4.80	4.40	6.00

Note: Negatively-skewed variables have the median and inter-quartile (Q1, Q3) range also reported.

Table 7: Descriptive statistics for continuous independent and dependent variables

In regards to the final (third) model, there was a statistically significant association between transfer and professional group, when controlling for the other individual, training and organisational factors within the final model (global P value=0.0022). In comparing these professional groups, medical officers rated their transfer generalisation (mean) almost one unit greater than those in the Professions group (estimate=0.92, 95% Confidence interval (CI): 0.36, 1.47). There was also a statistically significant association between transfer generalisation and goal-setting when controlling for the other variables (e.g., individual, training and organisational factors and professional group) within the model (global P value=0.0003). For every one unit increase in goal-setting, the mean transfer variable increased by approximately half a unit (estimate=0.47, 95% CI: 0.24, 0.71). The other predictor variables such as emotional intelligence (OEA & ROE) and motivation-to-transfer also had statistically significant associations with transfer generalisation when controlling for the other variables in the model, as shown in Table 8. For example, there was a statistically significant association between transfer (mean) and support, when controlling for the individual, training and organisational factors within the model (global P value=0.0248). In this study, participants who stated they did not have support had a mean training transfer half a unit less than participants who stated they did have support (Support (no versus yes) estimate= -0.52, 95% CI: -0.97, -0.07).

Predictor variable	Estimate (95% CI)	P value	Adjusted R^2
Model 1 – individual factors			0.5995
Study (Medical vs Professions)	0.61 (0.02, 1.19)	0.0437	
EI:OEA (mean)	0.43 (0.14, 0.92)	0.0051	
EI:ROE (mean)	0.43 (0.12, 0.75)	0.0086	
Intrinsic motivation (mean)	-0.43 (0.11, 0.10)	0.1062	
Motivation-to-transfer (mean)	0.80 (0.45, 1.16)	<0.0001	
Model 2 – individual and training factors			0.5983
Study (Medical vs Professions)	0.76 (0.08, 1.45)	0.0291	
EI: OEA (mean)	0.42 (0.13, 0.71)	0.0062	
EI:ROE (mean)	0.46 (0.14, 0.79	0.0063	
Intrinsic motivation (mean)	-0.42 (-0.95, 0.1)	0.1119	
Motivation-to-transfer (mean)	0.81 (0.45, 1.16)	<0.0001	
Time since training (months)	-0.02 (-0.06, 0.02)	0.3499	
Model 3 – individual, training and organisational factors			0.7686
Study (Medical vs Professions)	0.92 (0.36, 1.47)	0.0022	
EI:OEA (mean)	0.39 (0.16, 0.62)	0.0015	
EI:ROE (mean)	0.51 (0.25, 0.76)	0.0004	
Intrinsic motivation) (mean)	-0.53 (-0.94, -0.12)	0.0128	
Motivation-to-transfer (mean)	0.55 (0.24, 0.85)	0.0010	
Time since training (months)	-0.03 (-0.07, 0.00)	0.0587	
OTC: goal-setting (mean)	0.47 (0.23, 0.71)	0.0003	
Support (no vs yes)	-0.52 (-0.97, -0.07)	0.0248	

Table 8: Multivariable linear regression results of training generalisation versus three levels of predictors

The same procedure was performed in regards to the dependent variable, transfer maintenance. The same individual, training and organisational factors except motivation-to-learn, had P values <0.2, as did employment status, hence were included. Models 1, 2 and 3, presented in Table 9, are relevant to the dependent variable, maintenance; with Adjusted R^2 values shown for each model. Adjusted R^2 (*i.e.,* R^2 modified for the number of the predictors included in the models) has been reported as it only increases if the new term improves the model more than would be expected than by chance alone (Pallant, 2005).

Predictor variables	Estimate (95% CI)	P value	Adjusted R^2
Model 1 – individual factors			0.2563
Study group (*Medical* vs *Professions*)	0.32 (-0.40, 1.04)	0.3711	
EI:OEA (mean)	0.37 (0.01, 0.72)	0.0424	
EI:ROE (mean)	0.28 (-0.10, 0.66)	0.1411	
Motivation-to-transfer (mean)	0.23 (-0.11, 0.57)	0.1823	
Employment status (part-time vs full-time)	-0.76 (-1.57, 0.04)	0.0604	
Model 2 – individual and training factors			02609
Study group (*Medical* vs *Professions*)	0.54 (-0.29, 1.37)	0.1912	
EI:OEA (mean)	0.36 (0.01, 0.72)	0.0440	
EI:ROE (mean)	0.33 (-0.06, 0.71)	0.0966	
Motivation-to-transfer (mean)	0.23 (-0.11, 0.58)	0.1739	
Employment status (part-time vs full-time)	-0.81 (-1.61, -0.00)	0.0489	
Time since training (months)	-0.03 (-0.08, 0.02)	0.2836	
Model 3 – individual, training and organisational factors			0.4157
Study group (*Medical* vs *Professions*)	0.09 (-0.56, 0.74)	0.7856	
EI:OEA (mean)	0.45 (0.12, 0.77)	0.0082	
EI:ROE (mean)	0.44 (0.10, 0.78)	0.0131	
Employment status (part-time vs full-time)	-1.01 (-1.73, -0.29)	0.0074	
OTC *social cues* (mean)	-0.51 (-0.94, -0.08)	0.0227	
OTC *goal-setting* (mean)	0.78 (0.31, 1.25)	0.0021	

Table 9: Multivariable linear regression results: transfer maintenance versus three levels of predictors

In regards to transfer maintenance, there was no statistically significant difference between the two professional groups. However, goal-setting and emotional intelligence were again found to have statistically significant associations, when controlling for the other variables (individual and organisational factors) within the model. For example, for every one unit increase in the emotional intelligence ability, *able to appraise others' emotions* (OEA), mean transfer maintenance increased by approximately half a unit (estimate=0.45, 95% CI: 0.12, 0.77, global P value =0.0082).

In contrast, employment status and the organisational transfer climate variable, social cues, had significant negative associations with transfer maintenance. For example, as shown in Table 9, when controlling for the individual and organisational factors within the final model (global P value= 0.0074), part-time participants rated their transfer maintenance one unit less than full-time participants (estimate= -1.01, 95% CI: -1.73, -0.23).

Hence hypotheses H1 and H4 were partially supported in regards to transfer generalisation and maintenance of skills. In the final model, the training variable, *time since training,* was significantly negatively associated with transfer generalisation, but it was not associated with maintenance of skills. Hence hypothesis three (H3) was partially supported. Hypothesis two (H2) in regards to the duration of the training was not supported (*i.e.*, training duration would be positively associated with transfer generalisation and maintenance).

In regards to the comment sections in the survey, several recurring themes emerged and these are shown in Table 10. Many comments outlined workplace conflict as being an important motivator or consideration in undertaking the training. Those who attended the included managerial-leadership training for higher levels of responsibility reported that conflict resolution skills were important and needed in leadership and management positions.

Questions	Themes
Reasons for attending training	1. Self-improvement and development (n=9 nurses & n=9 MO) *2.* Organisational processes or recommended (n=11 RN; n=6 MO; & n=3 AH) such as performance review and development discussions with their manager. 3. Conflict issues at work (n=5 RN; n=2 Adm & n=1 AH) Examples included conflict with peers, MO and patients or their family. Other issues mentioned were low morale and "toxic environment".
Types of conflict examples reported.	1. Staff or team related conflict/dispute examples given (n=9 RN; n=3 MO; n=1 Adm & n=2 AH) 2. Patient or their family related disputes or conflict example given (n=3 RN) *Note: Though several stated they couldn't recall specific incidents or situations where they had used the conflict management skills (n=6 MO, n=5 RN & n=1 Adm), this may point to these people not consciously attempting to utilise the skills or remembering to use them.*
Ability to maintain conflict resolution skills	1. Using skills; many name particular skills and/or examples (n=19 RN; n=6 MO; & n=1 AH) Examples included were attentive listening skills, body language and emotional awareness. 2. Haven't been able to maintain; haven't practiced or been able to practice. (n=1 RN; n=2 Adm; n=4 MO & n=1 AH) 3. Maintaining skills but difficulty of doing so/due to difficulty of situation/conflict; hard to maintain skills "take a deep breath" (n=6 RN & n=1 MO)
Received support to transfer new skills (Total n=38)	1. Received support (n=15 RN & 2 MO) - examples included managers, HR, senior staff (nurse managers & nurse educators) & colleagues, multi-disciplinary team. 2. Did not receive support to transfer their training (n=10 RN, n=1 Adm, n=1 AH & n=9 MO)
Encountered barriers to transfer new skills (Total n=39)	1. Did encounter barriers to transferring skills (n=7 RN; n=5 MO & n=2 AH); examples included "boss" & senior staff due to hierarchy and inequalities in power/power usage, "busyness" of work & lack of time/passage of time, colleagues, stressful work & increased change of staff, lack of resources (busy wards and lack of time to practice & lack of funding to train all staff. Another mentioned "favouritism". 2. Did not encounter barriers to transferring skills (n=15)
Colleagues/others responded differently to them (Total n=33)	1. Responded they were treated differently in a positive manner (n=7 RN, n=4 MO, n=1 Adm & n=1 AH) they thought they were treated with more respect, that others sought them out to help with conflict issues; or that team-members were supportive & gave them feedback on their progress. Also that they were treated more seriously. They felt more confident. 2. Responded they were treated differently in a negative manner (n=2), examples: that they were seen as a "trouble-maker by not "letting it go" of issues and "rocking the boat".

Legend: **MO: Medical Officers; RN: nurses; AH: Allied Health professionals; Adm: Administrative staff.**

Table 10: Themes identified from responses to open-ended questions

3.7 Discussion

This is the first study of its kind to examine multiple individual and organisational transfer climate factors in relation to transfer generalisation and maintenance of conflict resolution skills. The results of this study indicated that people who had completed the training more recently and rated their motivation-to-transfer and ability to regulate their own and appraise the emotions of others higher, with organisational support and goal-setting cues, were more likely to report higher transfer of conflict resolution skills than other people without these individual and organisational influences.

Though not all the individual factors measured in the survey were significant (e.g., self-efficacy, organisational commitment or motivation-to-learn); motivation-to-transfer was significantly positively associated with transfer generalisation. This finding supports other research regarding motivation-to-transfer which has been found to consistently play a critical role in the transfer process (e.g., Gegenfurtner *et al.*, 2009b; Grossman & Salas, 2011; Kontoghiorghes, 2002; Sankey & Machin, 2014). Surprisingly, other than EI, no other individual factors were significant in regards to transfer maintenance.

There are ample studies linking EI to conflict resolution skills in general (e.g., Ayoko *et al.*, 2008; Jordan & Troth, 2002; Schlaerth *et al.*, 2013; Shih & Susanto, 2010). Yet this study appears to be the first to examine EI in relation to training transfer (generalisation and maintenance) of conflict resolution skills. However, there were mixed results. Only two of the sub-scales of EI (*regulation of own emotions* and *appraise emotions of others*) were significantly and positively associated with both transfer generalisation and maintenance. Though it was

hypothesised that all four components of EI would be important to generalise and maintain learning, it makes intuitive sense that people who are able to understand other's emotions and regulate their own are more likely to be able to transfer and then maintain their conflict resolution skills from training to the workplace. The other two EI subscales (*appraisal and use of own emotions*) may be less important aspects of EI in relation to conflict resolution skills.

In relation to organisational climate factors such as opportunity-to-use, organisational support systems, perceived support and barriers, and social- and goal-setting cues, the hypothesis was partly supported. Goal-setting cues and perceived support were found to be significantly related to transfer generalisation; and social cues and goal-setting cues found to be significantly related to maintenance, though in different directions.

Those participants who perceived positive support from their managers and/or organisation, with positive goal-setting cues, reported being able to transfer their conflict resolution skills more successfully. Those who perceived goal-setting cues reported being better able to maintain their skills than others in this study. These findings are supported by other studies regarding organisational climate factors (e.g., Thayer & Teachout, 1995; Xiao, 1996; Kontoghiorghes, 2002). Surprisingly, social cues were significantly negatively associated with training maintenance. This could possibly be due to social cues over time being perceived negatively, if managers persist in following up on maintenance efforts. Another possible explanation is that social cues lose influence over time. It may also be related to the small sample size or a factor of the regression analysis. For instance, the model may include suppressor variables.

With respect to transfer generalisation and maintenance in organisations generally, the results of this study are consistent with Ascher's (2013) recommendations to improve

organisations' transfer climate by providing staff with supportive processes and situational cues, such as goal-setting cues, when they attempt to implement new skills in the workplace.

Only one training factor, *time since training,* of the two examined was significantly and negatively related to training transfer as hypothesised. The result has high face validity, in that it could be expected that transfer generalisation may be less likely to occur as time passed as trainees may lose focus, forget or fail to recognise opportunities to apply new skills.

Results showed that medical officers reported higher training transfer than their counterparts in the Professions group which included nursing, allied health professionals and administration personnel. The Medical group attended training especially designed for, and supported by their profession with medical leaders in attendance, perhaps enhancing the training experience and increasing the transfer potential or likelihood. In comparison, the Professionals group attended training where different professionals could enrol which may have reduced participants' ability to speak frankly regarding workplace conflict (e.g., interprofessional conflict). Due to the small sample size, however, this result should be interpreted with caution. The study required replication with a larger sample to confirm results.

For transfer maintenance, the employment status of participants was a significant factor, with those who worked part-time reporting significantly lower maintenance of conflict resolution skills since completing the training than others in this study. This result has high face validity as less time spent at work reduces opportunities to practise, use and fine-tune conflict resolution skills. For example, Ascher (2013) found that the opportunity to apply and practice what was learned in training was rated as the highest predicting factor to the training transfer process, along with motivation to implement learning.

Limitations

This study utilised a survey as its only form of data collection which was predominantly Likert-scale self-report. It may be argued that there were self-report biases or influence of question order (Schwarz, 2004). However, self-report surveys provide an acknowledged method of gaining access to people's attitudes and motivations as they cannot be observed. It is a dominant and acknowledged data collection method in the social-sciences (Schwarz, 2004). Plus, participants were able to comment on different aspects of the conflict resolution program they attended, expand on reasons and give examples, assisting to better understand the quantitative results and counter any potential rating-biases that may have occurred.

Generalisability of these results may be limited due to the small sample size. Finally, factor analysis results (for factor, convergent and discriminant validity) would have assisted in answering questions relating to the measurement of transfer maintenance. However, it could not be conducted as the sample size and ratio of sample size to number of items were insufficient for a meaningful result. However, the qualitative results assisted to triangulate and validate aspects of the study.

Future research

Due to the relatively small sample in this study, spread over different professions and training programs, the conclusions herein are tentative and results require replication with larger samples of each professional group to further explore these differences between transfer generalisation and maintenance. To improve methodological vigour, a pre/post-training design could be conducted with a larger sample to replicate these results. It would be ideal to compare mixed and homogeneous professional groups completing the same conflict resolution training.

Further research regarding emotional intelligence and being able to generalise and maintain conflict resolution skills into practice is also needed, to explore this relationship further.

3.8 Conclusion

This study has highlighted that both individual and organisational transfer climate factors are important in influencing and supporting people's endeavours to generalise and maintain new conflict resolution skills in healthcare. However, organisational climate factors may be more important when staff are attempting to maintain new conflict resolution skills; as emotional intelligence was the only individual factor found to be significant in relation to maintenance of skills.

The results may help explain previous research quoting low levels of transfer or return of investment (Baldwin & Ford, 1988; Gitonga, 2007; Kontoghiorghes, 2002) as transfer generalisation and maintenance have largely been assumed to have the same, rather than different, influencing factors. If the factors are different, this may have implications for healthcare organisations in regards to how they motivate and support staff before and after training to increase transfer generalisation and maintenance of conflict resolution skills. This is especially important in light of the potential detrimental effects conflict can have on health professionals' decision-making when providing patient-care.

Chapter 4: Factors that influence the transfer generalisation and maintenance of managerial-leadership skills: a retrospective study.

4.1 Statement of Authorship

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Sonya Vandergoot, first author, PhD Candidate

This paper reports on original research Sonya Vandergoot conducted during the period of her Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. Sonya Vandergoot is the primary author of this paper. She was responsible for the conception of this study, literature review, developing the research aims and hypotheses and data collection and analyses; and wrote up the manuscript. Sonya Vandergoot was the first author and corresponding author for the manuscript and was primarily responsible for revisions to the paper. Her overall percentage of contribution to the paper is 85%.

Dr Aspa Sarris and Dr Neil Kirby were the PhD supervisors and contributors of the research program to which this manuscript belongs. They collaborated with Ms. Sonya Vandergoot on the development of the content and structure of the manuscript and assisted with editing and proof reading. Ms. Vandergoot was responsible for the conceptualisation of the research aims and hypotheses, literature review, statistical analysis and write-up of this manuscript. Their role was to discuss the feasibility of her research proposals, provide support and assistance when she encountered difficulties and to provide feedback and editing on manuscript drafts. They give permission for this paper to be incorporated in Ms. Vandergoot' submission for the degree of Doctor of Philosophy from The University of Adelaide.

NB: Please refer to Appendix A for a copy of the signed (original) version.

4.2 Preamble

The third study extends the second study by examining leadership skills, rather than conflict resolution skills. Both transfer generalisation and maintenance of skills to the workplace, were examined via an online survey. The sample included middle managers who had completed a managerial-leadership program within the previous fourteen years from one training and development unit, offered by a University to employees of South Australian public and private organisations.

The training included in study two targeted various health disciplines and/or levels of responsibility. Examining training transfer in relation to one particular leadership program which targeted the same level of managerial-leadership experience (e.g., middle management) was done with the aim of holding training variables relatively constant, in comparison to study two.

The study examined the same individual and organisational factors as study two. These factors included the individual factors of self-efficacy, intrinsic motivation, motivation-to-learn, motivation-to-transfer, organisational commitment and emotional intelligence; and the organisational factors of opportunity-to-use, organisational support systems, social and goal-setting cues, and perceived supports and barriers to training transfer.

This study addressed the main aim of this thesis which is to examine the two phases of training transfer concurrently, and the factors that influence them in relation to leadership knowledge and skills. It also aimed to contribute to further understanding of generalisation and maintenance by confirming the extent to which they are facilitated by different combinations of individual and organisational factors.

4.3 Abstract

Leadership and management skills are important for organisational performance. Organisations spend millions of dollars to train their staff in these skills, yet training is reported as being mostly ineffective and providing minimal return on investment.

This exploratory study employed a retrospective design to examine the factors affecting transfer generalisation and maintenance of managerial-leadership skills following a 12 month training program. Results showed that individual (e.g., motivation) and organisational factors (e.g., opportunity-to-use and perceived support) accounted for approximately 52% of the variance in relation to transfer generalisation. Further, individual (e.g., self-efficacy and motivation-to-transfer) and organisational factors (e.g., perceived support and barriers-to-transfer) accounted for approximately 41% of the variance regarding transfer maintenance.

This research may assist organisational development units to optimise training outcomes by attending to individual and organisational factors that may enhance both transfer generalisation and maintenance of new managerial-leadership skills.

4.4 Introduction

Worldwide, organisations invest billions of dollars annually in staff training and development (Grossman & Salas, 2011). For example, US annual training expenditure was estimated at US$130-135 billion (Chiaburu *et al.*, 2010; Delise, Gorman, Brooks, Rentsch & Steele-Johnson, 2010) and in Australia, approximately $8.68 billion was spent in 2011 on accredited training alone (Allen Consulting Group, 2013). This expenditure comes with the

expectation that employees will transfer the KSA learnt to the workplace to the benefit of both the individual and the organisation.

Research suggests there is minimal return on investment in regards to what is spent on training and the value returned to the organisation; with 10% return often quoted (Baldwin & Ford, 1988; Ford *et al.*, 2011; Grossman & Salas, 2011). As Kazbour, McGee, Mooney, Masica and Brinkerhoff (2013) assert, there is a significant difference between acquiring knowledge during training and applying it at work. However, past estimations of training transfer are problematic in regards to how they were derived (Farrington; 2011; Ford *et al.*, 2011). What is clear is that measuring training transfer is complex and multifaceted and a precise percentage is difficult to determine (Farrington; 2011; Ford *et al.*, 2011).

Transfer of training (training transfer) is defined as the effective and continuing application of KSA learned or acquired from training to the workplace and the subsequent generalisation and maintenance of these KSA (Baldwin & Ford, 1988; Gegenfurtner *et al.*, 2009b). Baldwin and Ford, as a part of their 1988 influential review of training transfer research which found a lack of guiding theory, developed a Model of the Transfer Process. Their model highlights the three broad categories of influencing factors (individual, training and organisational) of generalisation and maintenance of KSA, after learning and retention. This led to many studies into these three categories of factors (e.g., Hester, Hutchins & Burke-Smalley, 2016; Marshall & Rossett, 2014). Yet, there are still gaps in our understanding of transference and how to maximise and maintain it (Baldwin, Ford & Blume, 2017).

Training transfer research is complicated by the fact that training programs differ in their content and presentation, making comparisons between studies complex. For example, many studies do not distinguish between the different types of skills taught. Laker and Powell (2011)

differentiated between hard-skills, such as working with equipment, data or software, and soft-skills that are either intrapersonal (ability to manage self) or interpersonal (managing interactions with others). They contend that making the distinction between hard- and soft-skills training will help clarify current knowledge of training transfer and how to facilitate it, as soft-skills like leadership are less likely to transfer to the workplace than hard-skills.

Leadership and Management skills

Globalisation and technological advances in recent decades have led to greater competition in global markets, and put pressure on all organisations to improve performance. There is a growing world-wide demand for high-level cognitive and interpersonal skills due to these global changes (OECD, 2013; Smith, 2003). Skills such as communication, self-management and the ability to learn have become increasingly important to enable organisations to deal effectively with market uncertainties (OECD, 2013). It is therefore imperative for organisations to train their managers to plan and deliver business strategy and manage change (Smith, 2003); as well as to provide leadership, mentorship and direction to staff to meet organisational goals. Success at management level therefore requires proficiency in soft skills such as leadership, conflict resolution and communication. Technical skills, even for technical positions, are insufficient for career success beyond entry-level positions (Laker & Powell, 2011).

Managerial-leadership development programs, a term that acknowledges the integration of traditional managerial and leadership behaviours (Collins & Holton, 2004; Yukl, 1989), incorporate a combination of task-orientated or “hard” and interpersonal or “soft” skills. This includes ensuring team or organisational task objectives and strategies are met, together with influencing subordinates' and team's commitment, identification and compliance in task

behaviour to achieve organisational objectives (Yukl, 1989). These ‘soft’ skills are more complex and difficult to transfer to the workplace (Sørensen, 2017). Sørensen (2017) contends that leadership skills, the ability "to influence others in order to achieve a goal" (Kellner, *et al.*, 2018, p. 35), are more complex to learn than technical tasks as the former involves learning abstract theoretical concepts or approaches and then being able to link and apply them.

Organisations expect that managerial-leadership development investment will automatically improve organisational performance (Romaniuk & Haycock, 2011). Yet three meta-analytic reviews (*i.e.*, Burke & Day, 1986; Collins & Holton, 2004; Powell & Yalcin, 2010) which collectively examined studies from 1951 to 2002 regarding managerial-leadership development programs, found effect sizes were on average low (Collins & Holton, 2004; Powell & Yalcin, 2010) to moderate (Burke & Day, 1986); and differed largely across programs, ranging from poor to highly effective (*i.e.*, effect sizes ranged from -1.39 to 2.10) (Collins & Holton, 2004). Additionally, research indicates consistently poor retention rates or maintenance of skills in general (Guerra-López, 2016).

Maintenance of KSA is defined as the continuing use of newly-acquired skills or behaviours at work over time (Baldwin & Ford, 1988) and is one aspect of training transfer. There has been minimal research focusing on maintenance of skills over time (Axtell *et al.*, 1997). Nor has there been a focus on the transfer generalisation and maintenance of managerial-leadership skills (Sørensen, 2017). It is all the more important to understand which individual and organisational factors influence the transfer of this complex combination of hard and soft skills.

Research on factors that influence training transfer are inconsistent or mixed (Grossman & Salas, 2011). One possible reason for these inconsistencies may be how training transfer is operationalised and measured at different times post-training (e.g., immediately or varying

months after training). Training transfer has been defined and illustrated in models as being a combination of generalisation and maintenance of skills (e.g., Baldwin & Ford, 1988). Transfer generalisation likely occurs relatively soon after training when newly learnt skills are being practised, and errors are made and corrected (Baldwin & Ford, 1988). Maintenance of skills occurs after the initial transfer generalisation phase when these new skills have become part of a repertoire or "toolkit" of skills, and skill competence diminishes if not utilised (Baldwin & Ford, 1988).

Unlike other studies which examine transfer generalisation and maintenance linearly, one after the other (e.g., Axtell *et al.*, 1997), this study proposes that for complex skills like managerial-leadership, transfer generalisation and maintenance may potentially occur concurrently for different skills within the managerial-leadership skill-set. Note that this process may not necessarily be time-dependent or bound (Burke & Hutchins, 2008). That is, generalisation may take longer for some skills and less so for others within the leadership skill-set, dependent on trainee's individual factors (such as motivation, interests, or self-efficacy) and organisational factors (such as opportunity to practice and organisational/manager's support).

Based on Blume *et al.* (2019) Dynamic Transfer Model, this study proposes that the iterative cyclic nature of applying and maintaining KSA within the managerial-leadership skill-set leads to some skills being generalised while others are maintained concurrently. This aspect of training transfer has not previously been articulated. This gap in research is addressed in this exploratory study. The first hypothesis of study three is that:

> Individual and organisational factors will be related to transfer generalisation and maintenance of managerial-leadership skills differently (*i.e.,* some factors will

influence both transfer generalisation and maintenance of skills; while others will only influence one or the other) (H1).

Individual factors that influence training transfer

Many research reviews on training transfer (e.g., Baldwin & Ford, 1988; Burke & Hutchins, 2008; Grossman & Salas, 2011) have reported mixed or inconsistent results, so that any conclusions regarding key influencing factors of training transfer remain somewhat ambivalent (Grossman & Salas, 2011). Though most training transfer studies do not focus specifically on managerial-leadership training, there are several individual factors that have been repeatedly found to influence the transfer of skills to the workplace. These include self-efficacy, motivation (including intrinsic motivation, motivation-to-learn and motivation-to-transfer) and organisational commitment.

Research exploring the transfer of skills from training to the workplace has consistently found that efficacy beliefs (including general, specific and performance self-efficacy) predict participants' motivation-to-learn and motivation-to-transfer (Awais Bhatti *et al.*, 2014; Machin & Fogarty, 1997; Schwoerer *et al.*, 2005) or ease of use (Hester *et al.*, 2016); all of which influence training transfer. Self-efficacy is generally defined as a person's self-expectation or confidence in performing a specific task (Bandura, 1986). It is also conceptualised as a general belief in one's ability to succeed; such as perform work-role requirements successfully (general self-efficacy: GSE) (Chen *et al.*, 2001). GSE is a relatively stable, trait-like, generalised competence characteristic (Schwoerer *et al.*, 2005). It impacts motivation by influencing perseverance in addressing and overcoming barriers to achieve skill mastery (Petridou *et al.*, 2017).

Motivation has consistently been associated with training transfer. Colquitt *et al.,* (2000) meta-analysis of training outcomes found that motivation-to-learn was consistently positively correlated with declarative knowledge, skill acquisition, training transfer and post-training job performance. Similarly, motivation-to-transfer has also been consistently found to be essential for training transfer to occur (Awais Bhatti *et al.,* 2014; Gegenfurtner *et al.,* 2009b). Motivation-to-transfer is defined as the trainee's desire to use KSA mastered in training to the workplace (Gegenfurtner *et al.,* 2009b); making behaviour change more likely (Noe & Schmitt, 1986). Also, Sankey and Machin's (2014) study found support for intrinsic motivation (e.g., motivation related to personal interest in, and enjoyment of, an activity due to personal satisfaction). They suggest that the intrinsic benefit of learning creates commitment to implementing strategies to transfer new skills. Further, trainees retained more skills post-training when they perceived training activities as a source of intrinsic reward (Awais Bhatti *et al.,* 2014). Organisational commitment is another individual factor that is associated with training transfer. Research has found that employees committed to the goals and values of their organisation were more likely to transfer their learning if the training was important to the organisation (Daffron & North, 2006). Also, organisational commitment was an important predictor of motivation-to-learn and motivation-to-transfer, both of which have been consistently associated with training transfer (Kontoghiorghes, 2002).

Accordingly, based on the literature, it is further hypothesised that:

Individual factors (*i.e.,* general self-efficacy; motivation-to-learn; motivation-to-transfer; intrinsic motivation and organisational commitment) will be related to managerial-leadership skills transfer generalisation and maintenance (H2).

Emotional intelligence, managerial-leadership and training transfer

The ability to be aware of one's own and others' emotions and engage with them constructively was conceptualised by Goleman (1995) as emotional intelligence (EI). Kellner *et al.* (2018) integrative literature review of EI and leadership found that there was considerable research consistency regarding the importance of EI in leadership and how it positively affects leadership effectiveness, across different industries and fields. For example, Rode *et al.* (2007) study found that higher EI was associated with higher interpersonal effectiveness; and interacted with conscientiousness (motivation) to positively influence group effectiveness, public-speaking effectiveness and general academic performance.

In neuroscience, emotions have been identified among the principal drivers of behaviour, underpinning decision-making and problem solving (Dugan *et al.*, 2014), important components of learning (Jaeger, 2003) and training transfer. Further, Jaeger (2003) found that EI correlated positively with academic performance; pointing out EI's importance in learning. Berenson *et al.*, (2008) also found EI related to learning, with EI the primary predictor of academic success in online courses. Dearborn (2002) argues that interpersonal development programs, such as leadership training, fail to produce sustainable behaviour change in participants or transfer skills to the organisation because they fail to build participants' EI competence; which has been found to be a learnable skill (Kellner *et al.*, 2018; Nafukho, Muyia, Farnia, Kacirek & Lynham, 2016).

Despite Dearborn arguing for building EI competence as a way of increasing training transfer of interpersonal skills, the impact of EI on training transfer does not appear to have been previously researched. Hence, it must first be established empirically if EI is required to facilitate participants' transfer generalisation and/or maintenance of interpersonal skills to the workplace. Hence it is also hypothesised that:

Emotional intelligence will be positively related to transfer generalisation and/or maintenance of managerial-leadership skills (H3).

Organisational Transfer Climate

Organisational transfer climate refers to organisational factors that support or inhibit individuals' ability to generalise and maintain newly learnt skills in their workplace (Thayer & Teachout, 1995). It is understood to be a mediating factor between the organisational context and an individual's attitude towards their work (Holton *et al.*, 1997). According to Chiaburu *et al.* (2010), organisational transfer climate variables, such as manager support, and opportunity and time to practice skills, predict transfer success more consistently than other factors. Furthermore, these authors assert that these factors enhance training self-efficacy, increase trainees' learning goal-orientation and increase motivation-to-transfer the skills learnt.

Other organisational climate variables associated with transfer include social and goal-setting cues (Thayer & Teachout, 1995). These cues are given by managers and peers, or may be communicated through organisational policies, procedures or rhetoric that either encourage or discourage training transfer, depending on how they are perceived by the individual. These may therefore act as behavioural reinforcers or extinction processes (Thayer & Teachout, 1995). As Subedi (2004) asserts "training cannot be isolated from the system it supports" (p596). Accordingly, based on the literature, the fourth hypothesis is that:

Organisational transfer climate factors (*i.e.*, opportunity-to-use; organisational support; social and goal-setting cues; perceived support and barriers) will be related to managerial-leadership skill-transference/maintenance (H4).

4.5 Methodology

The aim of this retrospective exploratory study was to examine individual and organisational factors that influence perceptions of transfer generalisation and maintenance of leadership skills from training to the workplace. Retrospective study-design has been shown to be an effective, reasonable and valid method of program evaluation where alternative strategies are not possible (Schwarz, 2004). Training content remained relatively constant by examining these factors in relation to one University leadership program.

The program providers emailed participants on behalf of the researchers. Participants were asked to complete an online retrospective survey; with email reminders sent twice post-initial contact.

Sample

The study sample was obtained in 2016 by contacting University alumni of a leadership training program (PMP) (n=901) via email. The sample yielded PMP alumni (n=147) who had completed the leadership program between 2002 and 2016 (*i.e.*, 0–14 years since completion). Participants' ages ranged from 24 to 63 years, with a mean age of 44.7 years (SD 8.39 years). Study participants were from a range of industries including Local/State Government (15%), Banking/Finance (14%), Manufacturing (12%), Health (11%), Construction (7%), Education (5%), Automotive (4%) and Retail (4%). Table 11 provides further demographic information. Comparison Alumni population demographic information was not available. Response rate was approximately 17% of those contacted successfully (n=869).

Variables missing n (%)	n	(%)
Gender: 5 (3)		
Female	53	(36)
Male	89	(61)
Highest Education Level: 74 (50)		
High school or VET/Trade	11	(8)
Bachelor Degree	31	(21)
Post-graduate Degree	9	(6)
Master's Degree	13	(9)
PhD	1	(<1)
Other: such as Certificate or Diploma	8	(6)
Employment Status: 6 (4)		
Full-time	134	(91)
Part-time	7	(5)
Participants' Organisations: 11 (8)		
Government	51	(34)
Private	82	(56)
Non-Government Organisation (NGO)	3	(2)
Type of Job-role: 9 (6)		
Non-managerial role	31	(21)
Managerial role	88	(60)
Executive or Director role	19	(13)
Who organised PMP enrolment: 7 (5)		
Participant	84	(57)
Manager and/or HR	49	(33)
Other	7	(5)
Who paid for PMP: 7 (4.5)		
Participant	13	(9)
Work/Organisation	112	(76)
Combination of participant and work	11	(7.5)
Other	4	(3)
Job promotion due to PMP: 15 (10)		
Yes	58	(40)
No	74	(50)

n=147 * *Examples are given in results section*

Table 11: Descriptive statistics for independent categorical variables

Data Collection Instrument

Using multiple-item scales, the online survey, generated through *SurveyMonkey*, included demographic and skill utilisation questions, and several established individual and organisational self-report survey measures. These independent variable measures were:

New General Self-Efficacy Scale (GSE) is an eight-item measure developed by Chen *et al.,* (2001). Cronbach's alpha coefficient in this study was .90. A sample item is *I will be able to achieve most of the goals that I have set for myself.*

Wong and Law Emotional Intelligence Scale (WLEIS) is a 16-item measure with four subscales, namely self-emotion appraisal (SEA), others' emotion appraisal (OEA), use of emotion (UOE), and regulation of emotion (ROE), developed by Wong and Law (2002). Each scale is comprised of four items. Sample items from each sub-scale are *I have a good understanding of my own emotions* (SEA); *I am sensitive to the feelings and emotions of others* (OEA); *I always set goals for myself and then try my best to achieve them* (UOE); and *I am able to control my temper and handle difficulties rationally* (ROE). The Cronbach's alpha coefficients in this study for the subscales were .90, .91, .80 and .92 respectively.

Intrinsic motivation (SIMS) is a three-item measure developed by Guay *et al.* (2000). A sample item is: *I think leadership development programs are interesting.* The Cronbach's alpha coefficient was .89.

Motivation-to-learn (ML) is a three-item measure adapted from Noe and Schmitt's (1986) eight-item measure. A sample item is: *I am willing to exert considerable effort in training programs in order to improve my skills.* Cronbach's alpha coefficient was .92.

Motivation-to-transfer (MT) is a two-item measure adapted from Noe and Schmitt's (1986) eight-item measure. A sample item is *I believe my job performance will likely improve if I use the knowledge and skills acquired in training programs.* The Cronbach's alpha coefficient was .82.

The short version of the *Organisational Commitment Questionnaire* (OCQ) with nine positively-worded items, developed by Mowday *et al.* (1979), was utilised in this study. An item

sample is *I am proud to tell others that I am part of this department.* The Cronbach's alpha coefficient for this study was .91.

Organisational Transfer Climate: Positive Work Environment has three subscales; one is *Social Cues*. It is a 10-item measure developed by Thayer and Teachout (1995). A sample item is *When staff return from training, supervisors encourage them to share what they've learned with other staff.* The Cronbach's alpha coefficient for this study was .91.

Organisational Transfer Climate: Positive Work Environment, developed by Thayer and Teachout (1995), has three subscales, one of which is *Goal-setting* which was utilised in this study. It has six-items. A sample item is *Managers set goals for employees that encourage them to use new training.* The Cronbach's alpha coefficient for this study was .89.

Opportunity-to-use is a five-item measure developed for this study based on the work of Holton *et al.* (2000) and Thayer and Teachout (1995). A sample item is *I consciously allocated time to practice new skills/strategies learnt in the Professional Management Program.* The Cronbach's alpha coefficient was .68. See Appendix C for all the items in this measure.

Organisational Support (OS), the sub-scale of the General *Training Climate Scale*, was developed by Tracey and Tews (2005) and utilised in this study. It has five-items. A sample item is *There is a performance review and development system that ties recognition and rewards to use newly acquired knowledge and skills.* The Cronbach's alpha coefficient for this study was .83.

Two dependent variable measures were included in the survey. They were *Training transfer (generalisation)* and *Transfer maintenance. Generalisation* is a five-item measure regarding participants' transfer of managerial-leadership KSA. It was adapted from Xiao's (1996) six-item measure. One item is *I have found it difficult to use what I learnt at the training in my*

workplace (reverse scored). The Cronbach's alpha coefficient in this study was .80. *Transfer maintenance,* developed for this study and adapted from Xiao's (1996) training transfer measure, is a four-item measure regarding participants' maintenance of managerial-leadership KSA. A sample item is *Since attending the PMP, I have returned to my old ways of leadership and management* (reverse scored). See Appendix C for all four items of the *maintenance* measure. Cronbach's alpha coefficient in this study was .74.

All measures utilised a seven-point Likert scale, with response options ranging from one (strongly disagree) to seven (strongly agree). Each response option was described (e.g., slightly agree, moderately agree or strongly agree). Participants were also asked several open-ended questions regarding their perceptions or experiences (see Table 12 for survey open-ended questions). Further, they were asked to respond 'yes' or 'no' to the following questions:

- "Were there any enablers or supports (either in regards to yourself, the training or your workplace) that assisted your ability to use and/or maintain the skills covered in the PMP program in your workplace?" and
- "Were there any barriers (either in regards to yourself, the training or your workplace) that impeded your ability to use and/or maintain the skills covered in the PMP Program in your workplace?"

Respondents were able to give examples of enablers/barriers (in a comment box of the survey).

Open-ended survey questions
What was the reason for attending the PMP training? For example, how was the need identified?
Please describe your motivation at the time of attending the PMP in as much detail as possible.
Have you been promoted since attending the PMP? If yes, do you believe the promotion was as a result of having attended the PMP? Please explain your answer.
Please describe the impact of having attended the PMP on your career so far.
In relation to your work, can you think of an incident or situation that has stuck in your mind that relates to using any of the skills or strategies that was covered in the PMP? Please describe.
Have you been able to maintain the new skills over time since attending the training? Please give example(s) of how.
Is there anything you would like to add in regards to being able to use and maintain the skills learnt in the PMP you attended?

Note: Open-ended questions were located prior to Likert-rating items in the survey, with 5-10 blank lines available to respond to each question.

Table 12: Open-ended survey questions regarding PMP training

Leadership Program

All study participants completed the Australian University managerial-leadership program (PMP). Training content remained relatively unchanged and constant over the time it has been offered (approximately 18 years). Any changes were related to different topic facilitators and experts. The 12-month modular university-recognised non-award program (status of two subject-credits towards Master's degree of Business Administration: MBA) has been offered since 1999; and been completed by over 2000 middle and senior managers from a broad cross-section of private, public and not-for-profit organisations. With approximately 20 participants per intake, the program is offered approximately three times per year. The PMP, with 15 contact days, consists of four core modules including the following:

1. *Leading and managing people*;

2. *Strategic management*;

3. *Financial management*; and

4. *Lean Six Sigma* (regarding two business excellence and improvement methodologies) and two elective modules (chosen from a list of modules including *Contract Management, Results-driven coaching, Marketing for managers* or *Negotiation for success*). Each module is delivered over two days, with six-week breaks between modules. The program and assignments are highly interactive and include self-reflective group discussions, in-depth case-study analysis, lectures, presentations and problem-solving exercises. The modules are intended to facilitate abstraction and utilisation of principles and skills. Transfer strategies, such as reflection and practice, were emphasised throughout the program.

Ethical Considerations

Participants were provided with an information sheet. They were informed that participation was voluntary and that individual results would be confidential, with aggregate results only reported. Consent was obtained via the online survey process. No incentive to participate in the study was offered by the researchers. This research project was approved by the University of Adelaide Human Research Ethics Sub-committee (HREC approval #15/89).

Data Analysis

All statistical analyses were conducted using statistical software program, *Statistical Analysis Software* 9.4 (SAS Institute Inc., 2011). Mean values and standard deviations or appropriate frequencies, and Pearson correlations were calculated for all measures. Multivariable linear regression analyses were performed to examine the associations between the dependent variables, transfer generalisation and maintenance of leadership KSA, and the individual and organisational factors (independent variables). Univariate linear regression analyses were also

performed for all categorical, continuous and demographic variables (age, gender, education, role, employment status and time since training completed) for both dependent variables: mean transfer generalisation (transfer) and mean transfer maintenance (maintenance).

Assumptions of a linear regression were found to be upheld throughout by inspection of scatter plots and histograms of residuals and predicted values. Multivariable linear regression analyses were then performed for transfer and maintenance separately. All demographic and individual factors with a P value <.2 in the univariate analysis (namely employment status, self-efficacy, emotional intelligence's four subscales, motivation-to-learn, motivation-to-transfer, intrinsic motivation and organisational commitment) versus transfer were included in an initial individual factor multivariable regression analysis. Backwards elimination was performed (manually; not computerised step-wise) until all covariates had a P value <.2. Organisational variables with a P value <.2 (namely perceived support, perceived barriers, social cues, goal-setting cues and opportunity-to-use) were then added and backwards elimination performed until P values <.1.

The same procedure was performed on the dependent variable, maintenance. The same demographic, individual and organisational factors had P values <.2, and hence, were included. Though all individual and organisational factors were chosen based on previous research as possible outcome predictors, the backwards elimination process was selected as the sample size restricted the number of potential predictors in a multivariable model. Backwards elimination creates the most parsimonious predictive models for the outcome variables. Adjusted R-squared is also reported. It is R-squared modified for the number of predictors included. It provides a better estimate of the true population value, and only increases if the new term improves the model more than would be expected by chance alone (Pallant, 2005). Further, as two dependent

variables were analysed using the same demographic, individual and organisational factors, possible alpha inflation could be accounted for by the use of Bonferroni correction (*i.e.,* by using a P value cut off of 0.025 for significance in the multivariable models). However, Bonferroni correction is conservative and as there are only two dependent variables, it was decided not to adjust for multiple comparisons as this analysis was exploratory in nature.

Conventional content analysis was conducted on the open-ended responses (refer Table 12). Based on the method outlined by Hsieh and Shannon (2005), a "systematic classification process of coding and identifying themes or patterns" (p. 1278) was undertaken, with no preconceived categories used; instead allowing the categories and themes to emerge from the data (Hsieh & Shannon, 2005). The analysis was conducted by the main author, with the other authors checking coding individually, with consensus reached. Quantitative data analyses' results are reported first, followed by the qualitative data analyses' results.

Validity and Reliability of Scales

Cronbach's alpha coefficients in this study are generally .7 or above; with the lowest above the unacceptable level of .6 (Peterson, 1994) (refer to each measure). Hence the measures can be considered reliable and internally consistent (Pallant, 2005). Factor analysis (for factor, convergent and discriminant validity) could not be conducted as this study's sample size (>300) and ratio of sample size to number of items were not sufficient (Pallant, 2005) for a meaningful result. However, the majority of the measures have been previously tested in terms of content, construct, convergent and/or divergent validity indexes by their relevant research developers (e.g., GSE: Chen *et al.,* 2001; WLEIS: Wong & Law, 2002; SIMS: Guay *et al.* 2000; ML & MT: Noe & Schmitt, 1986; OCQ: Mowday *et al.,* 1979; and OS: Tracey & Tews, 2005; transfer: Xiao,

1996). Also, results from qualitative analyses of participants' responses assists to confirm validity of generalisation and maintenance as two stages of training transfer.

4.6 Results

Descriptive statistics for demographic, categorical and continuous variables are presented in Table 11 and 13 respectively. As can be seen in Table 13, variables that were not normally distributed (majority were negatively-skewed) have the median and interquartile range (Q1, Q3) reported. Participants generally provided positive ratings for the individual measures, particularly with respect to motivation. Transfer generalisation and maintenance variable means were positive, although less so. By comparison, mean scores for organisational measures were, on average, neutral, suggesting participants' perceived the potential for an improved organisational transfer climate. Participants' reported perceptions of receiving support (missing data n=38, 26%) with 33% (n=49) responding 'yes' and 41% responding 'no' (n=60).

In relation to perceiving barriers (missing data n=39, 26%), the majority of participants responded 'no' (n=73, 50%); 24% (n=35) responded 'yes'. Pearson's correlations were calculated for the continuous variables (see Table 14); the majority of the significant correlations were of small (.30 to .50) to moderate (.50 to .70) size, and only those in relation to transfer generalisation and maintenance, and motivation-to-transfer and intrinsic motivation were large (.70 to .90).

Linear regression analyses were performed to examine associations between the dependent and independent variables (see Table 15 and 16 respectively). When controlling for other variables, there was a statistically significant association between transfer and the

individual factors of intrinsic motivation and motivation-to-transfer, and the organisational factors of opportunity-to-use and perceived support, which explained approximately 52% of the variance (see Table 15). Most significantly, when controlling for other variables, for every one unit increase in motivation-to-transfer, the mean transfer variable increased by almost one unit (estimate=.92, 95% CI: .67, 1.17, P value <.001).

					Interquartile	
Variables	n	M	SD	Median	Q1	Q3
Training transfer mean	97	5.58	.86			
Training Maintenance mean	97	5.47	.90			
Time since training completed (years)	61	3.20	3.54	2.00	1.00	5.00
Self-efficacy (mean)	110	6.23	.63	6.40	5.90	6.60
Emotional Intelligence: SEA (mean)	105	6.17	.76	6.30	5.80	6.80
Emotional Intelligence: UOE (mean)	105	6.09	.73	6.30	5.80	6.50
Emotional Intelligence: OEA (mean)	105	5.85	.90	6.00	5.50	6.50
Emotional Intelligence: ROE (mean)	105	5.74	1.03	6.00	5.30	6.30
Intrinsic Motivation (mean)	104	6.09	.90	6.30	5.85	6.70
Motivation-to-learn (mean)	104	6.36	.76	6.70	6.00	7.00
Motivation-to-transfer (mean)	104	6.32	.79	6.50	6.00	7.00
Organisational Commitment (mean)	103	5.86	1.00	6.10	5.60	6.60
OTC: social cues (mean)	99	4.94	1.10	5.10	4.20	5.80
OTC: goal-setting (mean)	98	4.39	1.15	4.50	3.80	5.20
OTC: opportunity-to-use (mean)	98	4.15	1.07	4.20	3.40	4.80
GTCS: organisational support (mean)	98	4.35	1.27	4.40	3.40	5.20

Total n=147

Table 13: Descriptive statistics for independent and dependent continuous variables.

	Variables	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Training transfer mean	97	1														
2	Training Maintenance mean	97	.763***	1													
3	Time since training completed (years)	61	.024	-.028	1												
4	Self-efficacy (mean)	110	.328***	.467***	.016	1											
5	Emotional Intelligence: SEA (mean)	105	.169	.158	.043	.453***	1										
6	Emotional Intelligence: UOE (mean)	105	.257**	.383***	-.024	.715***	.324***	1									
7	Emotional Intelligence: OEA (mean)	105	.211*	.220*	.126	.437***	.646***	.299***	1								
8	Emotional Intelligence: ROE (mean)	105	.156	.226*	-.004	.439***	.602***	.477***	.558***	1							
9	Intrinsic Motivation (mean)	104	.371***	.269***	-.146	.211*	.168	.158	.215*	.154	1						
10	Motivation-to-learn (mean)	104	.491***	.334***	-.117	.339***	.204*	.245**	.177	.184	.641***	1					
11	Motivation-to-transfer (mean)	104	.639***	.493***	-.032	.318***	.139	.231*	.234*	.225*	.781***	.721***	1				
12	Organisational Commitment (mean)	103	.287**	.275**	.143	.435***	.441***	.435***	.265**	.333***	.153	.133	.251**	1			
13	OTC: social cues (mean)	99	.365***	.302**	.057	.250**	.299***	.303**	.325***	.327***	.298**	.227*	.319***	.615***	1		
14	OTC: goal-setting (mean)	98	.335***	.299**	-.020	.314**	.154	.402***	.310**	.240**	.189	.190	.280**	.477***	.703***	1	
15	OTC: opportunity-to-use (mean)	98	.350***	.301**	-.049	.134	.166	.194	.226*	.227*	.280**	.174	.290**	.375***	.620***	.630***	1
16	GTCS: organisational support (mean)	98	.126	.016	.153	.121	.082	.205*	.033	.083	.010	-.012	.077	.404***	.475***	.587***	.475***

Total n=147 Significance (2-tailed) $p < .05$* $p < .01$** $p < .001$***

Table 14: Pearson Correlations for continuous independent and dependent variables

Predictor variables	Beta (95% CI)	P value	Adjusted R^2
Model 1 – individual factors only			.4442
EI:UOE (mean)	.12 (-.05, .30)	.1800	
Intrinsic motivation (mean)	-.31 (-.54, -.08)	.0087	
Motivation-to-transfer (mean)	.93 (.67, 1.19)	<.0001	
Model 2 – individual & organisational factors			.5160*
Intrinsic motivation (mean)	-.36 (-.58, -.14)	.0016	
Motivation-to-transfer (mean)	.92 (.67, 1.17)	<.0001	
Opportunity-to-use (mean)	.14 (.01, .26)	.0291	
Support (no vs yes)	-.33 (-.58, -.07)	.0139	

**Adjusted R^2 difference between Model 1 & 2 = .0718*

Table 15: Multivariable linear regression results: transfer generalisation versus individual and organisational predictor variables

There were slightly different factors associated with maintenance (see Table 16), with 41% of the variance explained in the final model. Self-efficacy, motivation-to-transfer, perceived support- and barriers-to-transfer were significantly predictive of maintenance thus supporting that there may be different influencing-factors for the two transfer-phases. However, it must be noted that there was a large correlation between the transfer generalisation and maintenance variables (r=.763 p<.001).

Predictor variables	Beta (95% CI)	P value	Adjusted R^2
Model 1 – individual factors			.3534
Self-efficacy (mean)	.48 (.23, .73)	.0003	
Intrinsic motivation (mean)	-.27 (-.53, -.01)	.0391	
Motivation-to-transfer (mean)	.67 (.37, .98)	<.0001	
Model 2 – individual & organisational factors			.4102*
Self-efficacy (mean)	.47 (.23, .72)	.0003	
Motivation-to-transfer (mean)	.37 (.17, .57)	.0004	
Support (no vs yes)	-.29 (-.59, .01)	.0589	
Barrier (no vs yes)	.42 (.12, .73)	.0076	

**Adjusted R^2 difference between Model 1 & 2 = .0568*

Table 16: Multivariable linear regression results: transfer maintenance versus individual and organisational predictor variables

In summary, individual factors explained the majority of the variance for both transfer generalisation and maintenance. Neither demographic variables nor *time since training* were found to be significant; nor were many organisational factors. However, opportunity-to-use skills learnt was important in explaining some of the variance associated with transfer generalisation of leadership skills. Participant perceptions of support or barriers were the only other significant organisational factors that explained some of the variance for both transfer generalisation and maintenance. However adjusted R-squared did not increase substantially when organisational factors were added (adjusted R-squared difference of .0718 and .0568 respectively in Table 15 and 16).

Participants were also asked open-ended questions. Regarding reasons for enrolling, majority of participants (58%) cited organisational processes. For example, 42 participants (33% n=128) reported that PMP enrolment was discussed as part of performance review/development discussions with their manager; 25 (20%) as a part of organisational succession planning and/or leadership development policies; and seven (5%) were recommended PMP by their manager or senior staff who had also completed it. In contrast, 48 participants (37%) reported that they enrolled due to career aspirations, job opportunities and/or self-identified managerial-leadership skill-gaps. How participants come to be enrolled can give insight into their motivation at the time.

The majority of participants (n=79; 61%) reported that they were very motivated or enthusiastic to participate in the PMP. Others (n=30; 23%) indicated that they had mixed feelings; they were highly motivated yet concerned regarding their abilities (e.g., no university experience or long time since studied). A small number reported feeling nervous/anxious (n=8; 6%) or reluctant (n=7; 5%) about commencing; reasons included “bad timing” due to high

workload, busy home-life or concerns with studying. Hence, though a majority reported high motivation which was corroborated by quantitative results, some had concerns about their ability or work-life balance.

Regarding how the program impacted their career, 65 participants (51%) reported that they noticed improvement in their confidence, abilities and/or greater understanding of business processes. Another 21 participants (16%) reported that improved skills had led to promotions, higher work-role re-classification or being groomed for higher positions. These comments on promotion are consistent with the results obtained following the analysis of quantitative data on levels of skill transfer and maintenance. As well as mentioning skill improvement, 13 participants (10%) stated it led to pursuing further learning; such as a MBA. Conversely, 24 participants (19%) mentioned no, minimal or negative impact. Some gave no reason; others (more recent alumni) stated that it was too soon after completion or that it would impact in the future (e.g., applying for jobs).

Regarding support, of those who gave examples (n=40), the majority cited their direct manager (n=17, 43%), their work-team and/or organisation including other PMP alumni (n=16, 40%); followed by "self" (e.g., own initiative) or family (n=7, 17%). Examples of managerial support were mentoring, given time to implement new skills, having discussions, being able to share ideas (e.g., "sounding-board"), encouragement and "trust to do things differently". These comments were consistent with results obtained following analysis of quantitative data on perceptions of support and skill transfer generalisation/maintenance.

Regarding organisational barriers (n=38), examples given by respondents included negative attitudes (e.g., managers, team or executive team n=23 61%) and negative organisational culture, limitations of their role or "power" to work differently, limited relevancy to their current

role or heavy workloads (n=11, 29%). Lastly, “self” was named as a barrier by a few (n=4, 10%); examples were lack of confidence, understanding or memory.

Content analysis of responses to open-ended questions elicited interesting results; several strong themes emerged. In relation to transference of skills (n=105), the major theme was relevancy of PMP topics/skills to the participant’s current job-role (n=92, 88%); with examples given of how particular skills were utilised recurringly at work due to job relevancy. Though small, the second main theme was increased insight and understanding of other departments or people’s roles (n=9, 9%). Respondents commented on being able to utilise increased knowledge of business concepts and associated “language”, roles, processes or perspectives in relating to peers from other departments in their organisation; a cited area was finance. They valued being able to "speak the same language".

The major theme that emerged regarding maintenance of leadership skills (n=101) was skill relevancy to current work-role (n=56, 55%); examples included using particular tools/strategies daily with certain skills “becoming a habit”; while “losing” other un-utilised skills. One participant likened it to building a muscle that was exercised regularly. Conversely, the second main theme was not maintaining skills (n=14, 14%). Reasons for not maintaining skills included not currently in roles where skills could be used or were relevant; lack of time or opportunity to use; and organisational change/culture. These responses to open-ended questions provide further evidence of the importance of opportunity-to-use skills. The third theme (n=13, 13%) was maintaining new skills by continuing education (e.g., MBA).

An underlying theme of general comments (n=52) was that skill transference and maintenance were not explicitly thought about, before or after the program, despite its importance emphasised during the program. Thus, it seems that training transfer was subject to what was

happening at the time, rather than the focus of their training participation. Moreover, participants commented on the importance of a supportive work environment that encouraged mentoring, networking and making connections with other alumni, both formally and informally. Several commented on the benefits of reflection and goal-setting, and the time to do both; and the need to "use it or lose it". Overall, participants' comments provided evidence for the hypothesised differences between the two stages of leadership training transfer (generalisation and maintenance) and the results reported following analysis of quantitative data, as participants were able to differentiate between the two.

4.7 Discussion

This exploratory study examined individual and organisational factors that were perceived by program participants to have influenced the transfer generalisation and maintenance of managerial-leadership skills. Correlations confirmed the examined individual and organisational factors' positive relationship with both transfer generalisation and maintenance. Only organisational support and aspects of EI did not correlate with either generalisation or maintenance.

The findings also confirmed that, in relation to this particular training program, different factors were predictive of transfer generalisation (e.g., opportunity-to-use and intrinsic motivation) in comparison to transfer maintenance of managerial-leadership skills (namely perceived barriers and self-efficacy). Motivation-to-transfer and perceived support were predictive of both transfer generalisation and maintenance, highlighting their importance throughout the transfer generalisation-maintenance process (H1).

Regarding individual influencing factors (H2), there were mixed results with only intrinsic motivation, motivation-to-transfer and self-efficacy being significant. Not all of these were positively associated. Higher levels of motivation-to-transfer predicted higher levels of both transfer generalisation and maintenance of leadership skills. These results support previous research (e.g., Awais Bhatti *et al.,* 2014; Chiaburu *et al.,* 2010; Colquitt *et al.,* 2000; Gegenfurtner *et al.,* 2009b) which identified motivation-to-transfer as an important factor for transfer to occur. In this study, many participants (58%) indicated that they had enrolled in the program due to organisational processes (e.g., succession planning or leadership development policies) which most likely impacted positively their motivation-to-transfer the managerial-leadership skills. Organisational-supported training and the way it is framed can promote learner readiness and subsequently enhanced transfer-motivation (Gegenfurtner *et al.,* 2009b).

The positive correlations between intrinsic motivation and transfer supports other research, such as that of Sankey and Machin (2014) and Awais Bhatti *et al.* (2014). Yet, intrinsic motivation was significantly negatively associated with transfer generalisation in the multivariable linear regression analysis. This is surprising in light of the positive correlation. This result is likely due to suppressor variable(s) in the regression analysis. Self-efficacy was also positively related to maintenance of skills which supports previous research in this area (e.g., Chen *et al.,* 2001; Petridou *et al.,* 2017; Schwoerer *et al.,* 2005).

This is the first study to examine emotional intelligence (EI) with multiple individual and organisational factors in terms of its relationship with perceptions of transfer generalisation/maintenance of managerial-leadership skills (H3). The results were mixed. On the one hand, EI abilities to use one's own and appraise other's emotions correlated with both phases of training transfer. Whereas, EI regulation of emotions correlated only with maintenance and

self-emotional appraisal correlated with neither. Further, EI *use own emotions* was found to predict transfer generalisation; but only prior to organisation factors being added; and it was not predictive of skill maintenance. Rode *et al.* (2007) found strong evidence linking EI both directly and indirectly, as moderated by motivation, to individual performance (such as interpersonal effectiveness and general academic performance). As they noted, complex relationships are involved requiring further empirical verification.

Regarding organisational factors (H4), there were again mixed results. Perceptions of organisational opportunity-to-use new skills in the workplace positively predicted transfer generalisation. This was supported by participants' comments about barriers-to-transfer which included lack of opportunity/time to practise what was learnt due to workplace constraints. This finding is consistent with previous research (e.g., Daffron & North, 2006; Grossman & Salas, 2011). Though opportunity-to-use new skills was not predictive of maintaining skills, it correlated moderately.

Although participant perceptions of support or barriers to training transfer included individual factors such as motivation, the majority were work-related (e.g., support from managers, work-teams or PMP Alumni). These findings are consistent with other research (e.g., Awais Bhatti *et al.*, 2014; Chiaburu *et al.*, 2010; Grossman & Salas, 2011) regarding managerial/peer-support being important workplace environmental influences. The results suggest that if trainees perceive support such as encouragement and receive positive feedback on skill utilisation, they are likely to feel better able to transfer the skills to their workplace.

Interestingly, many participants named networking during/after the program as a positive outcome; with several naming it as a support mechanism for skill practice/utilisation. Other research has also found mentoring, networking and connecting with peers in the workplace after

training important for leadership development (Romaniuk & Haycock, 2011). Another positive outcome reported was increased understanding of different organisational roles and departments; with several participants commenting on being able to communicate more effectively with staff in the workplace. Improved intra-organisational communication and interactions may lead to enhanced organisational performance, inter-personal and departmental information and knowledge sharing (Durugbo, Tiwari & Alcock, 2013). Improved organisational communication may be a valuable training outcome which should be considered in training evaluations.

Limitations

This study examined perceptions of transfer generalisation and maintenance of managerial-leadership skills retrospectively in relation to one training program. This may be considered a possible limitation. While all surveys and questionnaires are retrospective to some degree, and the length of time since training completion was not a significant factor, the length of time for some participants (several years) between training completion and the study may have affected their ability to remember past feelings, thoughts or motivations.

In addition, although the training organisation advised that the program had remained relatively unchanged over the time it has been delivered, any differences could not be quantified and controlled for. Generalisability of these results may be limited as they are in relation to one particular Australian leadership program. This program may differ from other leadership programs.

Although the data were predominantly Likert-scale self-report measures, participants were able to comment on different aspects of their experiences, expand on reasons and give examples, assisting to triangulate results. Participant's comments provided more in depth insight

into the quantitative results and assisted with countering any potential rating-biases that may have occurred.

Finally, due to the exploratory nature of the study, results of factor analysis (for factor, convergent and discriminant validity) may have assisted in answering questions relating to the measurement of transfer generalisation and maintenance. However, factor analysis could not be conducted as the sample size and ratio of sample size to number of items were insufficient for a meaningful result. However, results obtained from open-ended questions enabled data to be triangulated against results of the quantitative data analysis, thus validating aspects of the study.

Future research

Future managerial-leadership training transfer research should include longitudinal studies comparing transfer generalisation outcomes of different leadership programs with follow-up evaluations of skill maintenance over longer periods as assessed in this study. A longitudinal study could reduce possible issues of memory and recall which may be associated with retrospective study designs.

Romaniuk and Haycock (2011) recommended including 360-degree assessments by participants' managers and peers before and after managerial-leadership training to enhance skill-evaluation, rather than relying on self-reports alone. Further, large sample studies (300+) are needed to allow factor analysis of the transfer generalisation/maintenance measures for item evaluation to provide evidence of factor, convergent and discriminant validity.

The results of this study suggest that emotional intelligence should be further investigated, in terms of its relative influence on transfer generalisation and maintenance of managerial-leadership skills. Also, studies into organisational transfer climate and ways to increase positive support of managerial-leadership skill transfer are needed. For example, studies

examining coaching managers on how to support and mentor employees when they return to the workplace after undertaking a managerial-leadership program are needed.

4.8 Conclusion

This exploratory study was undertaken to address gaps in the literature on the training transfer of managerial-leadership skills in several ways. This was done by,

- examining transfer generalisation and maintenance concurrently;
- examining EI in relation to the training transfer of managerial-leadership skills; and
- examining the influence of multiple individual and organisational factors concurrently, thus contributing to a better understanding of these relationships.

In this study, individual and organisational factors were found to be influential at different times during the generalisation and maintenance process of managerial-leadership skills. Hence, leadership programs should be viewed as only one part of a multi-stepped organisational development system. Opportunity and time to practice and use new skills, together with organisational support from managers, were preferred post-training characteristics that were found to promote transfer generalisation and maintenance of new skills.

As Guerra-López (2016) asserts, “ultimately performance improvement is about improving the system” (p198). The results also suggest that organisations should consider improved post-training intra-organisational understanding as an additional benefit of training expenditure in terms of return-of-investment.

Chapter 5: Individual and organisational factors that influence transfer generalisation and maintenance of managerial-leadership programs.

5.1 Statement of Authorship

Submitted manuscript: awaiting review

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This paper reports on original research Sonya Vandergoot conducted during the period of her Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. Sonya Vandergoot is the primary author of this paper. She was responsible for the conception of this study, literature review, developing the research aims and hypotheses and data collection and analyses; and wrote up the manuscript. Sonya Vandergoot was the first author and corresponding author for the manuscript and was primarily responsible for revisions to the paper. Her overall percentage of contribution to the paper is 80%.

Dr Aspa Sarris, Dr Neil Kirby and Dr Julia Harries were the PhD supervisors and/or contributors of the research program to which this manuscript belongs. They collaborated with Ms. Sonya Vandergoot on the development of the content and structure of the manuscript and assisted with editing and proof reading. Ms. Vandergoot was responsible for the conceptualisation of the research aims and hypotheses, literature review, statistical analysis and write-up of this manuscript. Their role was to discuss the feasibility of her research proposals, provide support and assistance when she encountered difficulties and to provide feedback and editing on manuscript drafts. They give permission for this paper to be incorporated in Ms. Vandergoot' submission for the degree of Doctor of Philosophy from The University of Adelaide.

NB: Please refer to Appendix A for a copy of the signed (original) version.

5.2 Preamble

The fourth study examined longitudinally over three months the two phases of training transfer, generalisation and maintenance, of leadership skills. Two leadership programs were evaluated in this study. Data were collected before commencement and at completion of the two training programs, with a follow-up survey and telephone interviews completed approximately three months after training completion.

This study examined two managerial leadership programs undertaken by employees from one department of a University. It initially examined the same individual and organisational factors as studies two and three, with the addition of the individual factor, transfer implementation intentions, incorporated into the questionnaire battery. This individual factor was added to assess participants' intentions prior to commencing the leadership program and analyse its relationship with levels of leadership skills generalisation and maintenance after the program. However, due to the small sample size, several individual factors were removed (e.g., emotional intelligence, intrinsic motivation and organisational commitment) from the study to increase the power of the data analyses. Presented in this chapter are the results of the revised study.

This study addressed the main aim of this thesis: to examine generalisation and maintenance in the same study, and the factors that influence them. This study also aimed to increase our understanding of transfer generalisation and maintenance of leadership knowledge and skills by confirming previous thesis results regarding the importance of the examined factors that influence training transfer; and by clarifying that transfer generalisation of one skill may potentially occur while maintenance of other skills within the skill-set occurs.

5.3 Abstract

Organisations invest heavily in managerial-leadership training and development, as these skills are considered important for organisational effectiveness. Yet training evaluation research shows little substantive improvement in managerial effectiveness following training and indicates that leadership skills in particular show poor transfer to the workplace in comparison to "hard" technical skills. Examining individual and organisational factors that affect skill transfer generalisation and maintenance from two managerial-leadership programs, this study employed a mixed-methods prospective cross-cohort design, utilising mixed-effects models with baseline, post-training and three-month follow-up data. Eligible participants were enrolled in one of two 2016 leadership programs: Program-A (n=17) and Program-B (n=19); all of whom participated in this study. This study found individual and organisational factors influenced the two phases of training transfer differently. The present study contributes to current understanding of successful transfer generalisation and maintenance of managerial-leadership skills by indicating the importance of individual factors for generalisation and organisational factors for maintenance. It also presents a possible explanation for past inconsistent results; that is, that transfer generalisation and maintenance should be measured separately as two phases of the training transfer process, which may occur concurrently for complex skill-sets like leadership.

5.4 Introduction

Current globalisation and technological advances have increased organisational competition, requiring organisations to be more efficient and able to deal effectively with a rapidly changing labour market (OECD, 2013). Accordingly, it is vital that organisations train their managers to manage and lead people well (Smith, 2003). This has led to organisations

investing heavily in leadership training and development (Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017; van der Locht, van Dam, & Chiaburu, 2013). Despite expectations of improved organisational performance (Romaniuk & Haycock, 2011), much of the training transfer research shows poor return on investment (Burke & Hutchins, 2007; Cheng & Hampson, 2008). Labelled the "transfer problem" (Baldwin & Ford, 1988), concerted research effort has been applied to investigate the 'problem' of how much is transferred from training to the workplace and what are the associated factors that influence the level of transfer achieved. Despite this effort, there are still considerable gaps and/or inconsistencies in this area of research. Further, applied research is needed to improve our understanding of the factors that influence training-transfer and maintenance of leadership skills in the workplace, and how they work in 'real life'. Such understanding will assist in improving training effectiveness and investment returns.

This exploratory action-research study examined the training-transfer (generalisation and maintenance) of two University-based leadership programs up to three months post-training, to investigate leadership transfer in relation to multiple individual and organisational influencing factors. This mixed-methods study examines transfer generalisation and maintenance concurrently, which may address previous inconsistent results. This paper outlines relevant training-transfer research in relation to individual and organisational factors that influence training-transfer, before summarizing the study, the hypotheses, and how it examined the factors of interest.

The problem: Training effectiveness and Return of investment

Globally, organisations invest heavily in staff training and development (Allen Consulting Group, 2013; Baldwin, Pierce, Joines, & Farouk, 2011; Grossman & Salas, 2011), with annual training expenditure estimated at US$130-135 billion in the United States (Chiaburu, Van Dam,

& Hutchins, 2010) and at $8.7 billion in Australia alone (Allen Consulting Group, 2013). As Dawe (2003) states, it is likely to be "just the tip of the iceberg" (p13). This expenditure comes with the expectation that the new knowledge, skills and attitudes (KSA) will be transferred to the workplace and improve organisational performance (Romaniuk & Haycock, 2011). However, research suggests there is minimal return on investment in regards to what is spent on training and the value returned to the organisation (Baldwin & Ford, 1988; Ford, Yelon, & Billington, 2011; Grossman & Salas, 2011), with studies generally showing little substantive improvement in managerial effectiveness following leadership training (Avolio, Avey, & Quisenberry, 2010; Baldwin *et al.,* 2011; Collins & Holton, 2004). As Kazbour, McGee, Mooney, Masica, and Brinkerhoff (2013) point out, there is a significant difference between acquiring knowledge during training and applying it at work.

Across three meta-analytic reviews regarding managerial-leadership development programs, namely that of Burke and Day (1986) (studies from 1951-1982), Collins and Holton (2004) (studies from 1982-2001), and Powell and Yalcin (2010) (studies from 1952-2002), effect sizes were on average low (Collins & Holton, 2004; Powell & Yalcin, 2010) to moderate (Burke & Day, 1986). In addition, Collins and Holton point out the high variability of managerial-leadership development program effectiveness, which ranged from poor to highly effective (i.e., effect sizes ranged from -1.39 to 2.10). Interestingly, Lacerenza, Reyes, Marlow, Joseph, and Salas (2017) in their more recent meta-analysis of leadership training programs, found more optimistic levels of leadership programs effectiveness (.63 - .82). However, Muyia and Kacirek (2009) emphasize the importance of providing tangible evidence of the impact of training in organisations, such as return-on-investment in the form of KSA training-transfer and organisational performance. From an organisational point of view, training expenditure benefits

should be in the form of improved performance, productivity, profit, safety and/or market share (Salas & Cannon-Bowers, 2001). In addition, it is reasonable to expect that its effectiveness will be maintained for a period of time after training completion. However, the meta-analysis by Blume *et al.* (2010) of 89 transfer studies found that the relationship between post-training knowledge and transfer declined as time increased; what they describe as evidence that the effects of learning decay over time.

Training-transfer (transfer) cannot be taken for granted, with low estimations and variance of transfer quoted regularly in literature reviews (e.g., Blume *et al.*, 2019; Burke & Hutchins, 2007; Cheng & Hampson, 2008; Gegenfurtner, Veermans, Festner, & Gruber, 2009) and meta-analyses (Blume *et al.*, 2010; Burke & Day, 1986; Collins & Holton, 2004; Powell & Yalcin, 2010).

Model of the Transfer Process

Baldwin and Ford (1988), as a part of their influential review of training-transfer research, developed a Model of the Transfer Process, which highlights three categories of influencing factors (individual, training and organisational) of transfer generalisation and maintenance of KSA, after learning and retention. They define training-transfer as the effective and continuing application of KSA acquired from training to the workplace, with subsequent generalisation and maintenance of skills over time (Baldwin & Ford, 1988). Their model, described as the most frequently cited transfer model (Blume *et al.*, 2010), led to a large number of studies into factors that influence training-transfer in these three categories (e.g., Burke & Hutchins, 2008; Hester, Hutchins & Burke-Smalley, 2016; Marshall & Rossett, 2014).

Despite this added interest, many systematic literature reviews on training-transfer (e.g., Burke & Hutchins, 2008; Cheng & Hampson, 2008; Gegenfurtner *et al.*, 2009) have reported

mixed or inconsistent research results (Grossman & Salas, 2011). Further, comparison between different training-transfer studies is complex because many do not distinguish between hard-skills (e.g., working with equipment or software) and soft-skills training (e.g., interpersonal skills such as conflict resolution or leadership) (Laker & Powell, 2011). Franke and Felfe (2012) point out that interpersonal skills are more difficult to learn and transfer to the work context, as they require higher cognitive effort as well as a supportive work-context. This is especially important when examining leadership development, as transfer of managerial-leadership skills has been found to be more difficult due to its complexity, as it incorporates a combination of both hard and soft skills with technical and abstract theoretical-concept learning needed (Laker & Powell, 2011; Sørensen, 2017).

Transfer generalisation and maintenance of managerial-leadership skills

The inconsistent results described may be due to the operationalization of training-transfer. Training-transfer is generally defined as encompassing both transfer generalisation and maintenance of skills (e.g., Baldwin & Ford, 1988; Grossman & Salas, 2011). Generalisation is defined as the ability to apply "key principles and skills from training... by the trainee in the appropriate way with a diverse range of settings and people" (Ford *et al.*, 2018, p203). Ford *et al.* (2018) point out that generalisation is about appropriate application of new skills and knowledge at work, and not just mimicking behaviours. Transfer maintenance is defined as the continuing use of newly acquired skills or capabilities over time (Noe, 2002). Hence, failure to use newly trained skills at work will result in skill decay, likely due to inadequate opportunity to utilise or demonstrate the trained behaviors and KSA, or decreased motivation to use the skills due to lack of rewards or barriers (Ford *et al.,* 2018). To clarify, this paper will use the term training-transfer

when discussing the overall concept, and generalisation or maintenance when discussing one of the two phases of training-transfer.

The operationalisation of training-transfer, generalisation and/or maintenance of skills has been problematical and inconsistent (Taylor, Russ-Eft, & Taylor, 2009; Franke & Felfe, 2012), with studies measuring either training transfer, only generalisation, or only maintenance. Further, whether examining transfer or an aspect of transfer, studies have measured them cross-sectionally at different times after training, ranging from immediately after training (most common) to one-year post-training (least common) (Axtell, Maitlis & Yearta, 1997). For example, Blume *et al.*, (2010) found that the time between training and transfer measurement ranged from immediately to 163 weeks after training (i.e., lab studies: M=1.6 weeks; median = 1 day; and field studies M=15 weeks; median = 7.5 weeks). These differences make comparing study findings difficult, possibly accounting for inconsistent research results. Less research examines the maintenance of trained skills over time or the factors that support or influence it, in any depth (Axtell *et al.*, 1997). Also, Burke and Hutchins (2008) point out that the transition from generalisation to maintenance is not necessarily time dependent. It is more likely dependent on skill competency being achieved, irrespective of amount of time passed.

The Dynamic Transfer Model is a more recent training-transfer model, developed by Blume *et al.* (2019). Their model highlights the iterative and evolving nature of training-transfer, with skill transfer unfolding over time. Their model highlights possible changes in interest, people, context and situations, and the influences they may bring, and that these changes affect the ability and motivation of people attempting to generalize and maintain skills, often over multiple transfer attempts.

In keeping with Blume *et al.*'s (2019) Dynamic Transfer Model, an iterative cyclic nature of applying and maintaining KSA within the managerial-leadership skill-set would mean that some skills are being generalized while others are concurrently maintained (Vandergoot, Sarris, & Kirby, 2019). Hence, the generalisation and maintenance of individual skills may potentially occur at different rates compared to other skills within complex skill-sets, dependant on the influencing factors that support or inhibit associated training-transfer strategies and behaviors (Vandergoot *et al.,* 2019). For example, particular leadership skills may receive greater situational cues, such as support or encouragement from mentors or peers as they align with individual interests or the training-transfer climate of the organisation (Blume *et al.,* 2010). Other leadership skills may be more difficult to transfer (generalize and maintain) due to limited opportunity to practise them. These differing experiences will likely equate to varying rates of generalisation, and in turn, maintenance of individual skills within the leadership skill-set. This suggests that transfer needs time to evolve and build. Hence, it is hypothesized that:

H1: Participants will report a higher level of transfer generalisation three months post-training than immediately after training.

Individual factors influencing training-transfer

Baldwin and Ford's (1988) review of training-transfer research prompted a marked increase in studies exploring factors that influence the transfer (generalisation and maintenance) of skills in the workplace. Influencing factors were categorized into being related to either the individual, the training or the organisation (Baldwin & Ford, 1988). A wide array of individual factors have been studied (Blume *et al.,* 2010). Blume *et al.* (2010) found in their meta-analytic study that there were few consistently strong individual predictors of transfer (one being cognitive ability). However, though there are inconsistent results in regards to several individual

factors such as personality (e.g., extroversion, consciousness, openness to experience; Burke & Hutchins, 2007), some individual factors have been found to consistently influence (moderately) the transfer of skills to the workplace in systematic literature reviews (Blume *et al.*, 2010; Burke & Hutchins, 2007). These include self-efficacy and motivation (motivation to learn and to transfer) (Blume et al., 2010; Burke & Hutchins, 2007; Colquitt, LePine, & Noe, 2000; Franke & Felfe, 2012; Gegenfurtner *et al.*, 2009; Krishnamani & Haider, 2016; Noe & Schmitt, 1986; Switzer, Nagy, & Mullins, 2005). More recently, transfer implementation intentions (TII) has also found consistent support (Machin & Fogarty, 2004; Sankey & Machin, 2014).

Self-efficacy is generally defined as a person's self-judgment or beliefs regarding their competency to perform particular tasks (Burke & Hutchins, 2007). Self-efficacy is consistently found to be positively related to performance (Gegenfurtner et al., 2009; Machin & Fogarty, 1997; Petridou, Nicolaidou, & Karagiorgi, 2017). Many others also found self-efficacy related to successful transfer of new skills to the workplace post-training (e.g. Burke & Hutchins, 2007; Chiaburu & Marinova, 2005; Chiaburu, Van Dam, & Hutchins, 2010; Holladay & Quinones, 2003; Machin & Fogarty, 1997; Machin & Fogarty, 2003; Salas & Cannon-Bowers, 2001; Schwoerer et al., 2005). Studies have also reported that self-efficacy is associated with other individual factors (e.g., motivation-to-learn, motivation-to-transfer and transfer implementation intentions; Colquitt, LePine & Noe, 2000; Gegenfurtner et al., 2009; Machin & Fogarty, 2003) and positive organisational transfer climate factors (e.g., manager and peer support; Chiaburu, Van Dam, & Hutchins, 2010) related to training-transfer.

Motivation-to-learn and motivation-to-transfer have both also found strong support in research regarding their relationship with training-transfer (Colquitt, LePine, & Noe, 2000; Franke & Felfe, 2012; Gegenfurtner et al., 2009; Krishnamani & Haider, 2016). Motivation-to-

learn is defined as a desire to learn, and indicates the strength of persistence and effort that people may apply before, during or after training (Burke & Hutchins, 2007). Krishnamani and Haider (2016) found pre-training motivation (to learn) key in relation to transfer. A meta-analysis by Colquitt et al. (2000) found that motivation-to-learn was consistently positively correlated with declarative knowledge, skill acquisition, and transfer of learning. Many studies and meta-analyses emphasise the importance of motivation-to-learn to the transfer of skills to the workplace (e.g., Burke & Hutchins, 2007; Chiaburu & Marinova, 2005; Colquitt et al., 2000; Gegenfurtner & Vauras, 2012; Gegenfurtner et al., 2009; Salas & Cannon-Bowers, 2001; van der Locht et al., 2013).

Motivation-to-transfer is defined as the desire to use the knowledge and skills learnt in training in the workplace (Noe & Schmitt, 1986). Motivation-to-transfer (also termed transfer motivation) has consistently been found to be essential for training-transfer to occur (Gegenfurtner et al., 2009; Gegenfurtner, 2011; Krishnamani & Haider, 2016; Massenberg, Schulte, & Kauffeld, 2017). Motivation-to-transfer has also been found to be associated with motivation-to-learn, self-efficacy, positive affect and declarative knowledge (Awais Bhatti, Ali, Isa, Faizal, & Mohamed Battour, 2014), all related to training-transfer.

A relatively new but promising individual factor found to influence training-transfer is transfer implementation intentions (TII) (Machin and Fogarty, 2003; Machin & Fogarty, 2004; Sankey & Machin, 2014). TII is defined as the intention to behave in a purposeful way under certain transfer conditions (Machin & Fogarty, 2004). These intentions support planning and engagement in transfer-enhancing strategies or behaviours (e.g., goal-setting or support-seeking) that facilitates the transfer of new skills on return to work post-training (Sankey & Machin, 2014). TII developed from a related construct, implementation intention, which has found

consistent support in relation to goal-striving and achievement (e.g., goals to change behaviours related to diet, exercise, alcohol consumption, or vocational retraining) (Gollwitzer & Sheeran, 2006), to name a few.

However, though there is agreement regarding these factors (self-efficacy, motivation and TII) and how they affect training-transfer in relation to other types of skills (e.g., Franke & Felfe, 2012; Gegenfurtner, Veermans, Festner, & Gruber, 2009; Krishnamani & Haider, 2016; Noe & Schmitt, 1986), there has been little to no research regarding these individual factors in regards to the transfer of leadership skills specifically (Sorensen, 2017). Further, a study by Vandergoot, Sarris, and Kirby (2019) suggests that individual factors may influence the two phases of training-transfer (generalisation and maintenance) differently. It is therefore hypothesized that:

H2: The individual factors examined in this study (i.e., general self-efficacy, motivation-to-learn, motivation-to-transfer, and TII) will be positively related to training-transfer (generalisation immediate and at three months post training, and maintenance at three months) of managerial-leadership skills at different times post-training.

H3: The individual factors examined in this study (i.e., general self-efficacy, motivation-to-learn, motivation-to-transfer, and TII) will influence generalisation, immediately and three months post training and maintenance, three months post training differently (i.e., some individual factors will influence both generalisation and maintenance; while others will influence only generalisation or maintenance of leadership skills, when both are measured concurrently).

Organisational factors influencing training-transfer

In terms of organisational factors, organisational transfer climate has been found to influence the transfer of KSA to the workplace (Chiaburu et al., 2010; Kontoghiorghes, 2002; Subedi, 2004). Organisational transfer climate incorporates practices and procedures that support

or inhibit an individual's ability to transfer learning to the workplace (Thayer & Teachout, 1995); thereby acting as either enablers of, or barriers to transfer. These include organisational systems and policies that support performance improvement, support from managers, opportunity and/or time to put learning into practice, and social or goal-setting cues from managers, peers or communicated through organisational policies and rhetoric that either encourage or discourage training-transfer, dependent on individual perceptions (Thayer & Teachout, 1995). Organisational factors have consistently predicted training-transfer success in relation to hard skills (e.g., Chiaburu et al., 2010; Kontoghiorghes, 2002; Subedi, 2004; Thayer & Teachout, 1995). However, how organisational factors influence leadership training-transfer has not been fully examined (Sorensen, 2017); although it seems likely that those found to influence the transfer of other types of skills would also be important for the transfer of managerial-leadership skills. Hence, it is hypothesized:

H4a: The organisational factors examined in this study (i.e., opportunity-to-use, organisational support systems, social and goal-setting cues; and perceptions of organisational support) will be positively related to training-transfer (generalisation, immediate and three months post training and maintenance, three months post training) of managerial-leadership skills at different times post-training.

H4b: Perceived barriers (e.g., lack of managerial support) will be negatively related to training-transfer (generalisation immediate and at three months post training, and maintenance at three months) of managerial-leadership skills.

H5: The organisational factors examined in this study (i.e., opportunity-to-use, organisational support systems, social and goal-setting cues; and perceptions of organisational support and organisational barriers) will influence generalisation, immediately and three months

post training, and maintenance, three months post training differently (i.e., some organisational factors will influence both generalisation and maintenance; while others will influence only generalisation or maintenance of leadership skills, when both are measured concurrently.

Training factors influencing training-transfer

Training factors are the third important category of factors that influence training transfer, as per Baldwin and Ford's (1988) model. If the quality of the training itself is poor, it will affect the likelihood of trainees being able to transfer what they had learnt, back to their workplace. Lacerenza et al. (2017), in their meta-analysis of 335 leadership training evaluation studies, provided data-driven recommendations for effective leadership training program design. They recommend that for leadership programs to optimise transfer, they incorporate the following training design features:

1. Conduct a needs analysis
2. Make attendance voluntary
3. Use multiple delivery methods
4. Provide feedback
5. Use a face-to-face setting
6. Have multiple sessions
7. Include hard (i.e., business skills) and soft skills (i.e., interpersonal leadership skills) content.

In this study, two university-based leadership programs were evaluated. The university indicated that these programs had undergone thorough quality control to develop leadership competencies of high calibre, with internal checks and reviews. Indeed, on comparison with Lacerenza et al., (2017) training design recommendations, both programs met all of the seven

features and had been designed specifically to meet the needs of the organisation (see Methods section for a full description of the training programs). Accordingly, due to the relatively small sample size, this study did not examine training factors in relation to the degree of training transfer achieved. However, Lacerenza et al., (2017) point out that the training features they recommend are to enhance motivation-to-learn and motivation-to-transfer, for transfer to occur. Hence, to confirm the quality of the training program, it is hypothesized that this should be reflected in increases in the participants' beliefs about themselves (i.e., self-efficacy), their motivation and intentions to transfer what they learnt to their workplace, thereby reflecting that the training had been successful in regards to these individual factors. Hence it is hypothesized that:

H6: Participants' self-efficacy, motivation-to-learn, motivation-to-transfer and transfer implementation intentions will increase after completion of the leadership program (i.e., comparison of pre-training and post-training measures).

5.5 Methodology

This exploratory action study employed a mixed-methods prospective cross-cohort design that utilized mixed-effects models. Baseline, post-training and three-month follow-up data were collected via hard-copy surveys and telephone interviews. Cohorts from two 2016 leadership programs were invited to participate in the study by a University Executive Education department with organisational endorsement, on behalf of the researchers. Participants completed up to three surveys and were invited to ‘opt-in’ for a semi-structured telephone interview in the three-month follow-up survey.

Participants

Eligible participants were enrolled in one of the two targeted 2016 university-based leadership programs: Program-A (n=17) or Program-B (n=19) (detailed further below); all of whom participated in this study (N=36). All Program-B participants had previously completed Program-A in either 2014 or 2015. Participants' ages ranged from 25 to 56 years (Mean=38.67 years, SD 7.94 years). Time worked in the job ranged from one month to 15.75 years (Mean=3.96 years, SD=3.79) (see Table 17 for other demographic information). Most participants were female (55%); tertiary qualified (88.9%); worked full-time (88.8%); and worked in non-managerial roles (61%).

Variables	Program-A		Program-B		Total	
	n	(%)	n	(%)	N	(%)
Gender						
Female	10	58.8	10	52.6	20	55.5
Male	7	41.2	9	47.4	16	44.5
Highest Education Level						
High school or VET/Trade	2	11.8	2	10.5	4	11.1
Bachelor Degree	11	64.7	5	26.3	16	44.4
Post-graduate Degree	0	0	5	26.3	5	13.8
Master's Degree	4	23.5	2	10.5	6	16.6
PhD/doctoral degree	0	0	4	21.0	4	11.1
Employment Status						
Full-time	13	75.4	19	100	32	88.8
Part-time	4	24.6	0	0	4	11.2
Role						
Managerial [+]	4	24	10	53	14	39
Non-managerial	13	76	9	47	22	61

[+] *Note that six participants were promoted to either manager roles (4) or other more senior roles (2) since commencing the Program-A leadership program (i.e., within 9 months of program commencement) hence total of 10 managers at 3-month post-training survey of Program-A participants (missing data=3).*

Table 17: Demographic statistics for participants of two leadership training programs.

Eight of the study's participants (Program-A = 4; Program-B = 4) participated in semi-structured telephone interviews (described further below). Their ages ranged from 33 to 49 years old (M=41.4 years); refer to Table 18 for more demographic information regarding the interviewees.

Demographic information	Program-A	Program-B	Total	
	n	n	n	(%)
Gender				
Female	4	2	6	75
Male	0	2	2	25
Highest Education Level				
Bachelor Degree	3	2	5	62.5%
Post-graduate Degree	0	2	2	25%
Master's Degree	1	0	1	12.5%
Employment Status				
Full-time	3	4	7	88%
Part-time	1	0	1	12.5%
Role				
Managerial	1	2	3	37%
Non-managerial	3	2	5	62.5%

Table 18: Demographic information for telephone interview participants (n=8).

Leadership programs

Two 2016 university bespoke managerial-leadership programs (specifically designed to build the leadership capability of a university department) were the focus of this study - named Program-A and Program-B. Program-A had been running for approximately 3-4 years with a minimum of one cohort per year. Program-B had commenced in 2016; its first cohort is included in this study. It was designed to build on the learning of Program-A. All Program-B participants had previously completed Program-A. University lecturers, who were also industry leadership

experts, delivered all program topics. Note that the study's researchers were external to the leadership program and the university department, and had no involvement with either their development or facilitation.

Program-A was conducted face-to-face over six months and involved six full-day (9am-5pm) monthly workshops; monthly three-hour group coaching; and monthly one and half hour "sandpit" sessions. The 2016 cohort underwent a vigorous organisational application and merit process to be accepted into the program. Topics included:

- Leading in volatility, uncertainty, complexity and ambiguity;
- Diagnosing technical problems and adaptive challenges;
- Team management;
- Work styles and preferences;
- Communication;
- Services and resources;
- Understanding organisational culture;
- Thinking systematically;
- Understanding and developing cross-functional networks;
- Perspectives on change (self, team and organisation);
- Resilience; and
- Embedding Learning (e.g., regarding transfer strategies).

As a part of the program, each learner completed the Team Management Profile (an on-line 60-item profiling tool of individuals' preferences and strengths in relation to decision-making and organising themselves and others; Margerison & McCann, 1995). This information was utilized during coaching and feedback sessions to increase participants' potential for learning and

transfer. Participants were also matched with another organisational employee who had completed the Program previously, with the aim of mentorship and establishing stronger organisational network links within their department to support utilization of new KSA (transfer). A reflective journal (to link learning to their workplace) was one of the assessment requirements.

The second program (Program-B) was delivered face-to-face over five full consecutive days, Monday-Friday. It was the first time this program had been offered. It was designed to meet organisational strategic plans regarding leadership development, and build on the learning and skills of Program-A. The 2016 cohort were "tapped on the shoulder" by their managers to attend; though attendance was voluntary. Program-B included individual and group assignments designed to broaden understanding of key concepts and provide opportunities to apply their learning. They also completed a self-reflective journal. Topics included:

- Mindfulness,
- Social Dynamics;
- Role theory;
- Power dynamics;
- Emotional Intelligence (EI);
- Courageous Conversations;
- Self-awareness;
- Heat in groups (e.g., managing conflict);
- Biases and assumptions;
- Constructive adult development;
- Deep-listening techniques;
- Design thinking;

- Supporting colliding perspectives;
- Adaptive challenges and Technical problems.

According to the program developers, the main difference between Programs A and B were the level topics were aimed at (e.g., knowledge of Program-A content was assumed in Program-B) and delivery mode. Program-A consisted of approximately 1.5 days per month over six months versus Program-B, which consisted of five consecutive full days. Delivery mode differed due to organisational preference and need. Both programs incorporated strategies, activities and information to maximize workplace transfer of KSA, such as the self-reflection journals.

Measures

Hard-copy surveys included individual and organisational measures (listed below); demographics questions (e.g., age, gender, education level, employment status, job title); and reasons for enrolling (pre-training). Post-training questions (i.e., immediately after training and three-months post-training) measured transfer generalisation and maintenance of managerial-leadership skills. Abbreviated versions of measures were utilized (see Table 19 for measures and study time-points) to meet organisational requirements regarding survey length. Individual factor measures included:

- New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001) is an eight-item measure. An example item is: *I will be able to achieve most of the goals that I have set for myself.*
- Motivation-to-learn (Noe & Schmitt, 1986) was measured using three-items adapted from the 8-item measure. An item example is: *I am willing to exert considerable effort in training programs in order to improve my skills.*

- Motivation-to-transfer (Noe & Schmitt, 1986) was measured using two items from the 8-item measure. An item example is: *I believe my job performance will likely improve if I use the knowledge and skills acquired in training programs.*
- Training Implementation Intentions (TII; Machin & Fogarty, 2004) is an 11-item measure. An example item is: *I will look for opportunities-to-use the skills which I have learned.*

Organisational factor measures included:

- Organisational Transfer Climate: Positive Work Environment Social Cues (Thayer & Teachout, 1995) is a 10-item measure. An item example is: *When staff return from training, supervisors encourage them to share what they've learned with other staff.*
- Organisational Transfer Climate: Positive Work Environment: Goal-setting (Thayer & Teachout, 1995) is a six-item measure. An example item is: *Managers set goals for employees that encourage them to use new training.*
- Opportunity-to-use is a five-item measure developed for this study; based on the work of Holton, Bates, and Ruona (2000) and Thayer and Teachout (1995). An item example is: *I consciously allocated time to practice new skills/strategies learnt in the Leadership Program.*
- General Training Climate Scale (GTCS) Organisational Support sub-scale (OS; Tracey & Tews, 2005) has five-items that measure perceptions of organisational systems and policies that support transfer. An item example item is: *There is a performance review and development system that ties recognition and rewards to*

use of newly acquired knowledge and skills. For clarity, it will be referred to as Support Systems.

In the three month follow-up survey, participant perceptions of support or barriers for transfer were determined using the question(s) "*Were there any enablers/barriers (either in regards to yourself or your workplace) that assisted/impeded your ability to use and/or maintain the skills covered in Program-A/Program-B in your workplace*?" Respondents were asked to respond 'yes' or 'no' to each question and to give examples. As the majority of examples given were organisational for both questions, these variables have been treated as organisational factors.

Transfer generalisation and maintenance dependent measures included: Transfer-generalisation, a five-item measure regarding participants' transfer of leadership and management KSA; adapted from Xiao's (1996) six-item measure. An item example is: *I have found it difficult to use what I learnt at the training in my workplace* (reverse scored).

Transfer maintenance, a four-item measure regarding participants' maintenance of managerial-leadership skills was developed for this study; adapted from Xiao's (1996) training-transfer measure to reflect maintenance rather than transfer. An item example: *Since attending the training, I have returned to my old ways of leadership and management* (reverse scored). Transfer-generalisation was measured immediately after training and three-months after training; whereas transfer maintenance was measured three-months post-training only (see Table 19).

A 7-point Likert-rating scale was used for all measures, with all response options labelled (e.g., neither agree nor disagree, slightly agree, moderately agree or strongly agree with similar disagree ratings); scores ranged from one (strongly disagree) to seven (strongly agree). All measures were considered reliable with a Cronbach's alpha coefficient generally .7 or above

(Pallant, 2005) as shown in Table 19. Survey response rates were: pre-training = 100% (n=36), post-training = 97% (n=35) and 3-months post-training = 83% (n=30) respectively.

Participants were asked to provide qualitative comments in the surveys. Pre-training survey questions asked about level of motivation, reasons for attending the program, and anticipated learning from participation. Post-training questions addressed motivation and strategies to implement learning and participants' expectations. Three-month post-training questions asked about enablers/barriers to transfer and utilization of new skills post-training.

Measures	Pre	Post	3-Mths Post	Cronbach's alpha coefficient
Training-transfer Measures				
Transfer-generalization		x	x	.78
Maintenance			x	.78
Individual Measures				
Self-efficacy	x	x		.82
Motivation-to-learn	x	x		.78
Motivation-to-transfer	x	x		.83
Transfer Implementation Intentions (TII)	x	x		.93
Organisational Measures				
Organisational Transfer Climate: Social Cues	x			.94
Organisational Transfer Climate: Goal-setting	x			.95
Opportunity-to-use	x			.69
GTCS Organisational Support (Support Systems)	x			.81
Perceived Support			x	
Perceived Barriers			x	

Table 19: Measures used at each study time-point with Cronbach's alpha coefficients

Telephone Interviews

Eight participants (Program-A = 4; Program-B = 4) participated in semi-structured telephone interviews to further investigate perceptions of training-transfer enablers and barriers post-training. Interviews took place approximately four to five months after their leadership training was completed and ranged in length from 13 to 35 minutes, with an average interview time of 21.4 minutes (note: length of interviews refers to the audio recording time, which does not include introduction or discussion prior/post interview questions being asked). Questions included: *What were the major enablers/supports and/or barriers they experienced? How did they take advantage of any enablers/supports and/or overcome any barriers? What strategies did they use to transfer and maintain new skills?;* and *Was there anything else they wanted to add regarding the transference/maintenance of leadership skills?*

Statistical analyses

All analyses were conducted using SPSS software Version 23 (IBM Corp, 2015). In view of the small sample size, a priori power analysis was conducted using G*Power (3.1.9.4) to compute required sample sizes for analyses using a power level of 0.80 and a significance criterion of = .05 to detect a medium effect size (d = 0.5). These analyses showed the sample size was sufficient for the paired samples t-tests required to examine the change in transfer generalisation over time (H1), and differences in pre- and post-training levels of individual factors (H6). The sample size was also sufficient for Pearson correlations to examine the relationships between variables (H2 and H4). As some variables violated the assumptions of normality, bootstrapping (using bias-corrected and accelerated method with 1000 iterations) was performed to calculate more stable confidence intervals and confirm correlation and t-test findings. There was not sufficient power to utilise independent samples t-tests required to test for

differences between the two program groups on the dependent variables to establish whether the two groups could be combined for subsequent analyses; consequently, Mann Whitney U tests were used.

To examine the influence of the individual and organisational variables on generalisation and maintenance (H3 and H5), linear regressions were performed. Graphs of residuals, predicted values and variance showed the assumptions of linear regressions were upheld. Due to the small sample size, univariate linear regressions were initially performed for each dependent measure, one model at a time, to identify covariates with p values <0.05 for inclusion in the multivariate models. When covariates were measured at more than one time-point, the difference between them was used to adjust for the covariate at pre-training. Though all individual and organisational factors were chosen based on previous research as possible outcome predictors, the sample size restricted the number of potential predictors in a multivariable model. Therefore, the backwards elimination process was selected as it creates the most parsimonious predictive models for the outcome variables. Adequacy of the sample size for each of the multivariate regressions was then established using the rule of thumb of 10 events for one predictive variable (Harrell, Lee & Mark, 1996: Vittinghoff & McCulloch, 2007). Using the variables identified in the univariate regressions, hierarchical multivariable linear model structures were then performed for transfer-generalisation post- and three-months post-training and maintenance measured three-months post-training. All demographic and individual variables with a p value <0.05 in a univariate model were included in an initial individual factor multivariable model (Model 1) and backwards elimination was performed (manually; not computerized step-wise); organisational factors with p value<0.05 were then added (Model 2) and backwards elimination performed. Adjusted R-squared values are also calculated for each model.

Qualitative data analyses

Responses to survey questions before and after training were categorized into common responses and frequency counts were made to calculate the percentage of participants who responded in particular ways (e.g., in the affirmative, negative or other).

Conventional content analysis was conducted on the survey comments and semi-structured telephone interview responses, based on the method outlined by Gill, Stewart, Treasure, and Chadwick (2008). Comments from surveys were analysed separately to data from interviews. Data was analysed in two ways: for themes and frequency counts (i.e., number of times a description/theme was mentioned). Content analysis was conducted by the main author, with two other authors reviewing coding individually, with 100% consensus reached after discussion of any differences. Though the authors attempted to analyse the data "with no preconceived themes or categories" as recommended by Gill, Stewart, Treasure, and Chadwick (2008), due to the literature reviewed for this study, categories of enablers and barriers (i.e., influencing individual and organisational factors) may have been unintentionally influenced it.

Ethical Considerations

For the survey and telephone interviews, participants were invited to participate via email with an information sheet included. Participants were informed that participation was voluntary, that they could withdraw from either study at any time, and that individual results would be confidential with only aggregate results published. This research project was approved by the University of Adelaide Human Research Ethics Sub-committee (HREC reference #16/39). There was no conflict of interest.

5.6 Results

Quantitative Results

Descriptive statistics are presented in Table 20; the median and interquartile range (Q1, Q3) are reported for skewed variables. A paired-samples t-test comparing the transfer generalisation post-training mean with the three-months follow-up mean showed an increase in reported generalisation (H1), although the difference was not significant ($t(34) = -1.35$, BCa 95% CI -0.41, .07, $p= 0.189$, Cohens $d = 0.25$). Comparisons of pre-/post-training means for individual measures using paired samples t-tests showed all four mean differences were significant (see Table 21). There were significant improvements post-training in self-efficacy, motivation-to-learn, motivation-to-transfer and transfer implementation intentions (TII); indicating that the training programs were successful in increasing these factors as hypothesised (H6).

		Total		Program-A only		Program-B only	
	n	Mean (Median)	SD and Interquartile range (Q1,Q3)	Mean	SD	Mean	SD
Training-transfer Measures							
Transfer-generalisation (post-training)	35	5.07	0.82	5.19	0.92	4.98	0.81
Transfer-generalisation (3-month post)	29	5.23	0.82	5.31	0 .90	5.16	0.76
Maintenance (3-month post)	29	5.51	0.83	5.44	0 .83	5.59	0.86
Individual Factor Measures							
Self-efficacy Pre-training	36	5.99	0.47	5.98	0.40	6.02	0.54
Self-efficacy Post-training	35	6.18	0.53	6.15	0.52	6.20	0.55
Motivation-to-learn Pre-training [+]	36	6.37 (6.50)	0.60 (6.00, 7.00)	6.48	0.65	6.28	0.55
Motivation-to-learn Post-training [+]	35	6.63 (7.00)	0.47 (6.00, 7.00)	6.71	0.46	6.54	0.47
Motivation-to-transfer Pre-training [+]	36	6.11 (6.00)	0.85 (5.50, 7.00)	6.32	0.92	5.97	0.77
Motivation-to-transfer Post-training [+]	35	6.57 (7.00)	0.52 (6.00, 7.00)	6.62	0.48	6.53	0.55
TII Pre-training	36	5.74	0.84	6.01	0.60	5.49	0.96
TII Post-training	35	6.02	0.66	6.05	0.70	5.99	0.63
Organisational Factor Measures							
Organisational Transfer Climate: Social Cues	35	5.11	1.14	5.28	0.76	4.94	1.41
Organisational Transfer Climate: Goal-setting	36	4.59	1.31	4.96	0.99	4.27	1.49
Opportunity-to-use	35	4.41	0.93	4.69	0.90	4.14	0.90
GTCS Organisational Support (Support Systems)	36	4.52	1.10	4.60	1.14	4.45	1.09

Note: [+] indicates negatively skewed variables with median and interquartile range (Q1, Q3) also reported.

Table 20: Descriptive statistics for independent and dependent variables (n=36)

	Pre-training		Post-training		BCa 95% CI	t value	*p*	Cohens d
	M	SE	M	SE				
Self-efficacy	5.99	0.08	6.18	0.09	-0.33, -0.05	-2.47	.019	.42
Motivation-to-learn	6.37	0.10	6.63	0.08	-0.48, -0.06	-2.31	.027	.39
Motivation-to-transfer	6.11	0.14	6.57	0.09	-0.76, -0.17	-3.05	.004	.52
Transfer Implementation Intentions (TII)	5.70	0.14	6.02	0.11	-0.62, -0.05	-2.18	.036	.37

Note: BCa 95% CI = 95% bias-corrected and accelerated confidence intervals; df = 34

Table 21: Pre- and post-training mean differences (using paired samples t-tests)

Three months post-training, 27 participants answered the Perceived Support question. The majority of both Program-A (n=12, 92.3%) and Program-B (n= 10, 71.4%) participants responded 'yes' to perceiving support for transfer. All except one participant gave organisational support examples. Twenty-eight participants answered the *Perceived Barriers* question three-months post-training, with lower percentages responding 'yes' to perceiving barriers to transfer (Program-A = 10, 76.9% and Program-B = 8, 53.3 %). Of these, 16 participants gave organisational barriers to transfer examples, and two gave individual barriers (e.g., motivation and confidence). Hence, these factors have been categorized as organisational in nature for subsequent analyses.

Correlations between the dependent measures, transfer-generalisation and maintenance, and independent measures are shown in Table 22. The results show that not all of the individual and organisational variables were significantly correlated with each of the training-transfer measures. In terms of the correlations with the individual variables, there were more significantly correlated with the measure of maintenance than the generalisation variables (at each time point). There were no major differences with respect to the pattern of correlations for the organisational variables and the training transfer measures. Significant correlations ranged from medium to large (r = .35 to .58) between the dependent and independent variables. Correlations between independent variables also ranged from medium to large (r = .34 to .85). As hypothesized, many individual and organisational factors were positively related to transfer generalisation and maintenance (H2 and H4a). Whilst it was hypothesized that Perceived barriers would be significantly negatively associated with training transfer, no significant correlations were obtained (H4b).

Prior to undertaking the hierarchical multivariable linear regressions, Mann Whitney U tests were undertaken to determine whether the two program groups differed with respect to the training-transfer dependent measures to enable the groups to be combined to achieve a sufficient sample size for regressions. No significant differences were obtained between Program A and Program B for transfer-generalisation (post) [U = 124.50, p = 0.354, r = .16], transfer-generalisation (3-month) [U = 87.00, p = .443, r = .14], or maintenance [U = 98.50, p = 786, r = .05]. Consequently, the data for the two program types were combined for the hierarchical regressions.

Hierarchical multivariable linear regression results for transfer-generalisation post- and three-months post-training are reported in Table 23 and 24 respectively (H3 and H5); and results for skill maintenance (maintenance) are reported in Table 25 (H3 and H5). Adjusted R-squared values are reported for each model.

Variables	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Training-transfer																	
1 Transfer-generalization (post-training)	35																
2 Transfer-generalization (3-mth post)	29	**.68*** **															
3 Maintenance (3-mth post)	29	**.61*** **	**.77*** **														
Individual Factor Measures																	
4 Self-efficacy Pre-training	35	.27	.30	**.51** **													
5 Self-efficacy Post-training	34	**.39***	**.52** **	**.53** **	**.61*** **												
6 Motivation-to-learn Pre-training	35	.15	.10	.24	.24	.17											
7 Motivation-to-learn Post-training	35	.23	.24	**.41***	.07	**.35***	.27										
8 Motivation-to-transfer Pre-training	35	.33	**.43***	**.37***	**.37***	.32	.31	.21									
9 Motivation-to-transfer Post-training	35	**.42***	**.44***	**.55** **	.12	**.43***	**.37***	**.78*** **	.23								
10 TII Pre-training	35	.21	.33	**.39***	**.51** **	.26	**.36***	.17	**.63*** **	.26							
11 TII Post-training	35	**.58*** **	**.56** **	**.57** **	.22	**.47** **	.18	**.56*** **	.32	**.76*** **	**.35***						
Organisational Factor Measures																	
12 OTC: Social Cues	34	.25	.34	.37	**.43***	.27	**.40***	.05	**.39***	.28	**.80*** **	**.40***					
13 OTC: Goal-setting	35	.28	.30	.28	**.36***	.15	.22	.04	**.39***	.23	**.68*** **	**.37***	**.85*** **				
14 Opportunity-to-use	34	.32	**.45** **	**.52** **	**.54** **	**.37***	**.40***	.05	**.37***	.29	**.71*** **	.26	**.65*** **	**.59*** **			
15 GTCS Org Support (Systems)	35	**.35***	**.42***	.34	.11	.18	.21	.05	.25	**.34***	**.43** **	**.47** **	**.76*** **	**.75*** **	**.36***		
16 Perceived Support (Enablers)	27	**.44***	**.44***	**.38***	-.05	.14	.11	.36	.24	.24	.21	.36	.07	.01	.09	.04	
17 Perceived Barriers	28	.18.	.08	-.10	.04	.003	-.31	-.23	-.03	**-.38***	-.01	-.19	-.22	-.16	-.18	-.28	.07

Significance (2-tailed) * $p < .05$, ** $p < .01$,*** $p < .001$ and shown in bold

Table 22: Pearson Correlations for independent and dependent variables

Predictor variables	*Beta (95% CI)*	*SE*	*P value*	*Adjusted R2*	*∆ Adjusted R2*	*F value*
Model 1: Individual Factors				.295		**8.12****
Transfer Implementation Intentions (pre-intervention)	0.76 (0.34, 1.19)	0.21	**.001**			
Transfer Implementation Intentions (difference)	0.76 (0.35, 1.17)	0.20	**.001**			
Model 2: Individual and Organisational Factors				.368	.073	**8.57****
Transfer Implementation Intentions (pre-intervention)	0.74 (0.33, 1.16)	0.20	**.001**			
Transfer Implementation Intentions (difference)	0.76 (0.35, 1.15)	0.19	**.001**			

*∆ Adjusted R2 – change in Adjusted R2 from Model 1 to Model 2; ; * p < .05, ** p < .01,*** p < .001*

Table 23: Hierarchical multivariable linear regression results for transfer generalisation at training completion (post-training) using individual and organisational factors as predictors

Predictor variables	**Beta (95% CI)**	**SE**	**P value**	**Adjusted R2**	**∆ Adjusted R2**	***F value***
Model 1: Individual Factors				.281		**6.46****
Transfer Implementation Intentions (pre-intervention)	0.75 (0.32, 1.19)	0.21	**.002**			
Transfer Implementation Intentions (difference)	0.60 (0.18, 1.01)	0.20	**.007**			
Model 2: Individual and Organisational Factors				.470	.189	**6.54****
Transfer Implementation Intentions (difference)	0.48 (0.11, 0.85)	0.18	**.013**			
Motivation-to-transfer (difference)	-0.29 (-0.63, 0.04)	0.16	.084			
Opportunity-to-use	0.55 (0.24, 0.85)	0.15	**.001**			
Perceived Support	0.71 (0.07, 1.36)	0.32	**.032**			

∆ Adjusted R2 – change in Adjusted R2 from Model 1 to Model 2; Support: no = 0, yes =1; ; ** p < .05, ** p < .01,*** p < .001*

Table 24: Hierarchical multivariable linear regression results for transfer generalisation three months post-training using individual and organisational factors as predictors

In the regression analyses, when controlling for other variables, there was one individual factor, that is transfer implementation intentions (TII) (both pre-training and difference post-training), that significantly predicted transfer-generalisation (post-training) and the individual factor, transfer implementation intentions (TII) (both pre-training and difference post-training),

with approximately 37% of the variance explained (see Table 23). Organisational transfer climate factors were not significant predictors of transfer-generalisation immediately post-training.

In terms of the regression findings for transfer-generalisation three-months post-training, it can be seen in Table 24 that both TII and the organisational factors opportunity-to-use and perceived support, were found to be significant predictors, with approximately 47% variance explained in the final model. The addition of organisational factors to the model added considerably to the amount of variance explained (i.e., Adjusted R2 changed from 0.281 to 0.470; a change of 0.189) (see Table 24). Hence, both individual and organisational factors were important for transfer generalisation three-months after training.

Comparing transfer maintenance results to those of transfer-generalisation (both measured three-months post-training), the same organisational factors (opportunity-to-use and perceived support) were found to be significant predictors, with approximately 43% of the variance explained in regards to maintenance (see Table 25). However, there were no significant individual factors that predicted maintenance in the final model. In addition, organisational factors added substantially to the variance in the final model (i.e., Adjusted R2 changed from 0.325 to 0.433; a change of 0.108) (see Table 25).

Predictor variables	Beta (95% CI)	SE	P value	Adjusted R^2	Δ Adjusted R^2*	F value
Model 1: Individual Factors				.325		**7.75 ****
Transfer Implementation Intentions (pre-intervention)	0.82 (0.39, 1.25)	0.21	**.001**			
Transfer Implementation Intentions (difference)	0.60 (0.19, 1.01)	0.20	**.006**			
Model 2: Individual and Organisational Factors				.433	.108	**5.77 ****
Organisational Transfer Climate: Social Cues	-0.47 (-0.98, 0.04)	0.24	.070			
Opportunity-to-use	0.64 (0.23, 1.05)	0.20	**.004**			
GTCS Organisational Support (Support Systems)	0.37 (-0.02, 0.76)	0.19	.061			
Perceived Support	0.73 (0.84, 1.38)	0.31	**.029**			

*Δ Adjusted R2 – change in Adjusted R^2 from Model 1 to Model 2; Support: no = 0, yes =1; ; * $p < .05$, ** $p < .01$,*** $p < .001$

Table 25: Hierarchical multivariable linear regression results for transfer maintenance three months post-training using individual and organisational factors as predictors

Qualitative Results

Responses to survey questions before and after training revealed participants' motivation and thoughts regarding the leadership training (see Table 26 for frequency percentages and examples of comments). From the pre-training survey responses (total n=35; 46% from Program-A) when asked about their level of motivation, half of the participants (51%) reported feeling motivated and enthusiastic prior to commencing their program (56% from Program-A). However, many (46%) reported mixed feelings regarding the impact on their workload (e.g. “I am highly motivated but very overworked!” “Very enthusiastic and excited to begin, but a bit of trepidation…”) (37% from Program-A). Anticipatory or mixed emotions prior to attending training may influence participants’ motivation-to-learn which, in turn, may impact their motivation-to-transfer new skills; a factor consistently found important in training-transfer (Colquitt, LePine, & Noe, 2000).

Themes from survey comments

Most common theme (% of responds)	**Second common theme (% of responds)**	**Third common theme (% of responds)**
Pre-training question: *Please describe your current motivation, in as much detail as possible. Reluctant? Very motivated?* (n=35)		
Enthusiastic & motivated (51%)	Mixed feelings (46%)	N/A
e.g., *Enthusiastic and very motivated. Motivated. Excited to learn more. Excited to share with the team*	e.g., *I am highly motivated but very overworked!* *Very enthusiastic and excited to begin, but a bit of trepidation…*	
Pre-training question: *What was the reason for attending the training? Please describe your reasons and thinking at the time of enrolling in as much detail as possible. For example, how was the need identified?* (n=36)		
Self-development (45%)	Selected (32%)	Networking (18%)
e.g., *Continue to develop leadership skills.* *To further develop myself and my capabilities.*	e.g., *I was nominated, am interested, so accepted.* *….was nominated and I thought it would be disadvantageous to decline the offer.*	e.g., *…developing a wider network.* *…want to ingrain myself within division by increasing contacts & awareness of other areas.*
Pre-training question: *Please describe how you believe attending Program-B will add to your learnings from Program-A you attended previously, in as much detail as possible.* (n=34) (Note: Program-B participants only)		
Build/reinforce learning (62%)	New learning (24%)	Network building (15%)
e.g., *…reinforce prior learnings.* *…refresh & practice previously learnt skills & concepts.* *…will cement and reinforce prior learning.*	e.g., *…give me new ways of thinking about problems* *…get guidance on how I can develop further.*	e.g., *Program-B will deepen relationships with others in the division.* *Strengthen networks & relationships.*
Post-training question: *Please describe your current motivation and strategies regarding using what you learnt in the program in your workplace (in as much detail as possible).* (n=28)		
Positively motivated (64%)	Mixed feelings (29%)	Negative (7%)
e.g., *Very motivated. I plan to go over what I learnt in the program & make a list of key tools I want to use at work.* *I am highly motivated to apply the learning. My strategy is to reflect…and identify areas… where I can apply the constructs or concepts.*	e.g., *I very much hope to be able to use some of the strategies… main difficulty… is being able to find the time to do so when back at "normal" work.* *I am very motivated to use the models…. I have struggled and continue to struggle to put much of what I have learnt into practice.*	e.g., *None. Need to do some unwrapping learning first.* *Still feel it's difficult to implement learnings with no reports & no team. I believe I could try to find more opportunities to practice elements if I was more dedicated.* *Too difficult to say. I need to work out what I have learnt first.*

Table 26 continued...

Post-training question: *Were your expectations met regarding the program and why you attended this leadership program? Please explain why.* (Note: asked twice – post & 3-months post-training) (n=35)		
Yes (67%)	Yes & No (29%)	No (4%)
e.g., *Yes expectations were exceeded.* *Yes I expected to be pushed out of this comfort zone & it happened. I like how it is making me think about things differently.*	e.g., *Hard to say yes or no. I had… no expectations. Did I get something out of it as I expected, yes. However, it is difficult to say just what I have learned, but I think this will be clearer over time.* *Yes and no. I experienced great learning. At the same time, I expected we would work towards something more tangible…*	*e.g., This is difficult to answer. No, in that I didn't really know what to expect… I probably expected more practical/frameworks/tips/processes…* *…I expected more exposure to Uni content, and more opportunity to try things with guidance; I don't feel like the sandpits met my expectations…*

Three month post-training question: *Were there any enablers or supports (either in regards to yourself or your workplace) that assisted your ability to use and/or maintain the skills covered in the Program-A/Program-B in your workplace? If so, what were those enablers/supports? How did they assist you? (n=25)*		
Support by Managers, teams and other program Alumni (n=23)	Opportunity to use (n=8)	Self-related: own ability/confidence (n=4)
e.g., *The program is regularly discussed in my office so that makes it easy to use and maintain skills learnt. [Assisted by] …asked questions & encouraged me to share what I had learnt.* *Members of my team; fellow trainees [Assisted by]… taking part in local activities inspired by the program; advice, encouragement, emotional support, exploring solutions*	e.g., *Manager provided opportunities-to-use my skills in other projects.* *I am now in a leadership position. Being in a leadership position provides me with more opportunities to utilise the skills I have learnt.*	e.g., *My personal will to implement mindfulness as part of my daily life (challenging though!). Mindfulness makes me become more aware of the "now" which gives me more clarity when dealing with some complex issues.* *Confidence to apply for higher level job.*

Three month post-training question: *Were there any barriers (either in regards to yourself, the training or your workplace) that impeded your ability to use and/or maintain the skills covered in the Program-A/Program-B in your workplace? If so, what were those barriers? What could have assisted you with those barriers? (n=23)*		
Lack of time and opportunity to use (n=9)	Organisational change or culture (n=6)	Self-related: momentum and persistence (n=4)
e.g., Limited opportunities - particularly in areas/projects with standardised procedures/ approaches. *Time - focus on getting job done & meeting time deadlines - resort to old way of thinking.* *Exhausting workload/lack of time.* *Busy doing job, hard to find time to reflect & implement learning.*	e.g., *The interminable restructure that my office is undergoing has left morale quite low, which can impact how you perceive & exploit opportunities.* *Staff that were "threatened" and cynical of potential changes to the team these 'new' ideas would create.*	e.g., *From a self-reflection perspective it has been challenging to maintain the energy that was produced out of the invitation to "work differently" as part of the program. It is very easy to slip back in to "business as usual" given that the world around us has not changed - we have.* *Biggest barrier is self-discipline, making time for evaluation & reflection.*

Table 26 continued...

Three month post-training question: *Were there any major life or work changes/events that either assisted or impeded your ability to implement what you learnt into your workplace? For example, did you move house or get married; did your workplace undergo any major changes. Were these positive or negative? Please list the events/changes and how they affected your ability to implement your learning into the workplace. (n=30) (Note: several stated no impact (n=8)*		
Negative Impact: e.g., Organisational Change; Work-life balance (n=10)	Positive Impact: e.g., Organisational Change; Work-role (n=7)	Mixed Impact: Challenges and opportunities (n= 5)
e.g., *There have been lots of negative events in my workplace - a leader who won't lead or manage, the work review process and an increase in workload with a decrease in staff available to carry out the work.* *General busyness of trying to maintain work/life balance - saps mental energy to really think about implementing new skills = negative impact.*	*e.g., A new boss has been appointed so some changes might occur in the future which may lead to an opportunity to implement what I have learnt.* *Promotion: positive - provided more opportunities to work with a greater range of people across the university and support junior staff.*	e.g., *I changed jobs - this was both positive and negative. I am now in a leadership position where the skills I learnt are more relevant but starting in a new job meant I had many new things to learn.* *…work. Now I have a new project & promotion I am really busy, working outside of my comfort zone & travelling a lot. It's been a huge shift but I'm enjoying the challenge.*

Table 26: Responses to survey questions (with examples per theme)

In the post-training survey (see Table 26 for examples of comments), more participants from both programs (64% compared to 51% pre-survey) reported high motivation and enthusiasm to practice and transfer new skills to the workplace immediately after training (e.g., "*Very motivated. I plan to go over what I learnt in the program and make a list of key tools I want to use at work*"); while 29% reported mixed feelings (37% from Program-A), usually concerned with work-loads or role (e.g., "*I very much hope to be able to use some of the strategies… main difficulty… is being able to find the time to do so when back at "normal" work*."). A few (7%, all from Program-A) reported little or no motivation-to-transfer new KSA due to their work-role (e.g., "*Still feel it's difficult to implement learnings with no reports and no team*"). Ambivalent or negative emotions post-training will likely affect motivation-to-transfer new leadership skills to the workplace. These comments supported quantitative ratings of motivation post-training.

In relation to questions regarding any enablers or barriers, and strategies to transfer new KSA, comments from surveys (n=26) and telephone interviews (N=8) revealed several, most of which were associated with the workplace (see Table 26 for survey responses; and Table 27 for interview responses). For example, other program Alumni (both current and past) was the main enabler reported (73% of all responders) (e.g., *"…have a shared understanding and language*"; "*Work in same office…can bounce ideas off each other…*"); followed by managers regarding feedback or opportunities to practice (61%) (e.g., "g*ave me room to practice"; "…he was a really good enabler because we could come back and debrief and chat about it*"); and self, in regards to positive motivation or personality (15%) (e.g., "*driven*"). Participants found it particularly enabling if their manager had also completed the program previously. Barriers included perceptions of limited opportunities to practice new skills, high workload and limited time (e.g., *"...hard to find time to reflect and implement learning*."); refer to Table 26 for more examples.

Regarding barriers to transferring new skills, lack of time or opportunity was the main theme (82% of all responders), often related to participants' roles ("*Busy doing job, hard to find time to reflect & implement learning*") (see Table 26). Barriers included:

- their team *("…they don't understand concepts*…");
- managers ("*...quite a different language so hard to have conversations with.*") and
- organisational issues ("*The interminable restructure that my office is undergoing has left morale quite low, which can impact how you perceive and exploit opportunities*") (72%).

Better understanding of enablers and barriers to training-transfer will assist in either enhancing or minimising them, to better support transfer-generalisation and maintenance of new leadership skills.

Content analysis of the telephone interview (N=8) data revealed several categories of enablers/supports, barriers and strategies to transfer new KSA to the workplace – please refer to Table 27.

Enablers/Support	Barriers	Strategies
Program(s) Alumni e.g., "*have a shared understanding and language".* *"Work in same office…can bounce ideas off…"*	Colleagues and managers who have not completed the program e.g. *"they don't understand concepts…"*	Organise meetings, both formal & informal, with program alumni
Manager(s) e.g., *"sounding board" "bounce ideas off" "gave me room to practice"; "…he was a really good enabler because we could come back and debrief and chat about it."*	Manager(s) e.g., fixed ideas about leadership or roles; not encouraging of new ways of working; *"…quite a different language so hard to have conversations with"*	Discuss and organise meetings with manager prior to commencing program; manager support such as regular meetings, discussion/critical reflection or feedback
Self – driven, motivated, purposeful, perspective (sees opportunities) e.g. organised a mentor *"It is what you make of it"; "I've been able to find that time and space but I've needed to create it for myself."*	Self – lack of or low confidence or memory; momentum; perspective (does not perceive opportunities in work contexts) or missed opportunities. e.g., *"I had every intention of doing that but I didn't do it."*	Allocate time (e.g., diary) to reflect, re-read program resources such as notes and practice skills (goal-setting).
Team and/or colleagues – support while away from work; willing to hear new ideas and try new methods	Team and/or colleagues – uncomfortable with change and/or new ideas. e.g., "*Staff were "threatened" and cynical of potential changes to the team these 'new' ideas would create."*	Understanding team dynamics and personalities e.g., introduce "safe to fail" experiments; be overt or covert in introducing new ways of working *("less confronting*")
Self – personality and learning style matched program delivery style; able to link theory to practice	Self – lack of understanding of concepts; could not link abstract theory to concrete work situations; work consequences and risk e.g., *"I'm probably not using the ones that went over my head or in one ear and out the other."; "…it is real so it's a little bit more on the line, a bit more risk."*	Training Program facilitators – provide concrete work examples to assist linking theory to practice; 3-6 month follow-up session to ensure linking theory to practice was successful
Work-role – lends itself to practising skills e.g., manage a team *"I'm in a role that enables me to use some of the things that were in the program all the time so there were a lot of skills …ability to practice*	Work-role / commitment e.g., loss of momentum; lack of time or opportunity to practice e.g., *"too busy"; "no time"; "heads down, bum up". "…not having time to really sit and reflect."*	Consciously allocate time to reflect & practise; meet regularly with Program alumni to continue momentum; organise formal opportunities such as a mentor.
Organisational Culture/change: Culture perceived as supportive; change events perceived as opportunities to practice.	Organisational Culture/Change e.g., *"…in survival mode";* *"…a lot of changes in a short space of time"; "…it's taken up the time I might have reflected"* "*The interminable restructure that my office is undergoing has left morale quite low, which can impact how you perceive & exploit opportunities."*	

Note: many of these concepts, enablers/supports and barriers are inter-related (e.g. telephone interview participants who reported successfully transferring many new skills, reported a lot of manager support, meeting regularly with program alumni outside of work; working daily in close proximity with other program alumni as well as being "driven" to reflect and practice new skills.

Table 27: Enablers, barriers and strategies for transfer generalisation and maintenance of leadership skills (as reported in telephone interviews)

5.7 Discussion

The main aim was to examine both transfer generalisation and transfer maintenance in the same study, and whether, in particular, different individual and organisational factors influence transfer generalisation differently in comparison to transfer maintenance.

Training factors were not considered in this study. The training programs were considered by the organisation and training provider as appropriate in terms of content, resources, and facilitators' expertise. Further, some confirmation of the quality of the training program was provided by support for hypothesis 6 that there would be significant increases in self-efficacy, motivation-to-learn, motivation-to-transfer and transfer implementation intentions from before to after training, demonstrating the relative quality of the leadership training program to enhance these factors, as recommended by Lacerenza *et al.* (2017).

The mean scores for the organisational factors were mostly in the moderate range indicating a generally positive view of the organisation in relation to transfer climate but allowing for improvement. However, although the mean scores for the individual factors all improved following the training, the pre-training means were generally high suggesting that there was less scope for improvement. Though reported transfer generalisation increased over three months, the means scores indicated a moderate level of generalisation in both cases and the difference was not significant. Hence, the first hypothesis was not supported. This may be due to some leadership skills requiring more time post-training for practice to occur to gain competence in these complex skills, and also possible ceiling effects due to the high ratings pre-training.

Several individual and organisational factors were found to correlate with transfer generalisation and maintenance, thus providing some support for hypotheses two and four (H2 and H4). For example, post-training measures of the individual factors, self-efficacy, motivation-

to-transfer, and TII correlated moderately with transfer-generalisation immediately and at three months post-training, as well as maintenance at three months. These results support previous research on these factors (e.g., Franke & Felfe, 2012; Gegenfurtner et al., 2009; Krishnamani & Haider, 2016; Sankey & Machin, 2014; Wilkesmann, Wilkesmann, & Virgillito, 2009). The organisational factors, Organisational Support Systems and Perceived support correlated moderately with transfer generalisation, while opportunity-to-use correlated moderately with both transfer generalisation and maintenance at the three-month follow-up only. Surprisingly, the organisational factors, goal-setting cues and social cues, did not correlate with either transfer-generalisation or maintenance as hypothesized. This fails to support previous research regarding the importance of goal-setting and social cues for training transfer (e.g., Brown, 2005; Thayer & Teachout, 1995).

As hypothesized (H3 and H5), individual and organisational factors influenced transfer generalisation and maintenance differently. Immediately after training, only the individual factor, transfer implementation intentions (TII), predicted transfer generalisation, with no organisational factors significant at that time. Three months after training, both individual and organisational factors predicted transfer generalisation; namely those of TII, opportunity-to-use and perceived support. Yet, only organisational factors, opportunity-to-use and Perceived Support, predicted transfer maintenance three months after training. This supports previous research by Vandergoot et al. (2019). However, it must be considered that potentially significant predictors were excluded due to using the conservative linear regression 'rule of ten' to avoid sparse data problems (Harrell, Lee & Mark, 1996; Vittinghoff & McCulloch, 2007).

TII was a significant positive predictor of transfer generalisation over time (immediately and three months after completing training), supporting other research regarding the importance of this relatively new individual factor (e.g., Machin & Fogarty, 2004; Sankey & Machin, 2014).

Interestingly, self-efficacy, motivation-to-learn and motivation-to-transfer did not predict either transfer generalisation immediately or three months after training or maintenance, in contrast to other research that had highlighted their importance (e.g., Chiaburu et al., 2010; Franke & Felfe, 2012; Gegenfurtner et al., 2009; Krishnamani & Haider, 2016; Wilkesmann, Wilkesmann, & Virgillito, 2009). This may be due to the small sample (i.e., "rule of ten" Harrell et al., 1996) or other factors. For example, Gegenfurtner et al. (2009) point out that motivation-to-transfer training is dynamic and is constantly affected by numerous other factors at any given time.

Organisational factors were more important three months after training for both transfer generalisation and maintenance. This highlights how employees' ability to transfer and maintain new skills is strongly influenced by the organisational support they receive and the opportunity to practise and maintain complex new leadership skills. This finding is consistent with previous research regarding support (e.g., Chiaburu et al., 2010; Gilpin-Jackson & Bushe, 2007) and opportunity to practise and use skills (e.g. Baldwin & Ford, 1988; Daffron & North, 2006; Grossman & Salas, 2011; Vandergoot et al., 2019). Also, Cook (2013) identified lack of opportunity for practising new skills as a hindrance to transfer. Egan, Yang, and Bartlett (2004) suggest organisational transfer climate factors are the most influential factors when applying new KSA to the workplace. These results assist in explaining previous research inconsistencies due to the comparison of studies' measuring training-transfer at different times post-training when the influence of individual and organisational factors can change across time (Vandergoot et al., 2019).

Further, the differences in influencing factors between the two training transfer phases tentatively supports examining them in the same study. This is consistent with Cook's (2013) qualitative study regarding executive coaching, which found differences in levels of reported transfer and maintenance (what she termed sustainability of learning). Cook also emphasized the

importance of sufficient time for managers to transfer and maintain new skills. Hence, further research is required into both the construct and the measurement of transfer-generalisation and maintenance when examined concurrently as two phases of training transfer.

The qualitative results in this study suggested that if participants perceive support (e.g., shared-reflection and/or positive feedback), they are likely to feel more able to transfer new skills to their workplace. This finding is consistent with other research regarding managerial/peer support being important workplace transfer influencing factors (e.g., Chiaburu et al., 2010; Grossman & Salas, 2011; Sørensen, 2017). Its importance was also emphasized in the qualitative themes regarding factors that positively influenced training-transfer. Additionally, Program-A participants commented on the supportive aspect of being paired with a program alumni, with many continuing this relationship after the program. Baldwin et al. (2011) highlighted the importance of opportunity coupled with accurate feedback and support, suggesting that less effective behaviors may otherwise be reinforced.

Moreover, qualitative data highlighted the importance of shared language and understanding of learnt concepts/theories (e.g., particularly enabling if their manager or team-member had also completed the program). This result supports Gilpin-Jackson and Bushe (2007) who found that having one's manager complete the same training was strongly associated with post-training utilization. Also, Watkins et al. (2011) emphasize the development of a common language as a significant training outcome.

Conversely, participants who reported organisational barriers to transferring new leadership skills to their workplace, also reported less or ambivalent motivation and difficulty in transferring new skills to their workplace. This supports the results of Vandergoot et al. (2019) who found perceptions of organisational barriers to transfer significantly predictive of maintenance of leadership skills.

Limitations

Due to this study's applied nature, a control group and random assignment were not possible; participant numbers were limited by class-size requirements; survey length was constrained by organisational requirements and not all variables could be measured at each time-point. Participants in this study were either self-selected (e.g., they applied to attend) or they were 'tapped on the shoulder' by their organisational managers. The applied nature of the study excluded some of these mentioned methodologies.

The small sample size and relatively large number of variables necessitated modifications in the linear regression analyses to ensure sufficient power (i.e., to avoid issues of sparse data) by the use of the "rule of ten" (Harrell et al., 1996). Though considered conservative (Vittinghoff & McCulloch, 2007) thereby allowing more confidence in the results, it may have been to the detriment of identifying other potentially significant factors.

Some researchers have also pointed out concerns of positive bias regarding utilisation of self-report pre-test/post-test measures (Rohs, 1999; Petridou, Nicolaidou, & Karagiorgi, 2017) and the use of self-report measures as a possible limitation which may also apply here (Taylor, Russ-Eft, & Taylor, 2009). However, though some reported means were high (e.g., motivation), analyses showed that there were still significant differences between some pre- and post-training levels and not others, and organisational factors were comparatively rated lower than individual factors. The study design (i.e., pre-/post-test and follow-up) did allow examination of the associations between the factors of interest. In its favour, Collins and Holton's (2004) meta-analysis of managerial-leadership program evaluation studies suggested that more studies utilizing single group pre/post (SGPP) training design should be undertaken.

Although the data collected were predominantly Likert-scale self-report measures, participants were also able to comment on different aspects of their experiences and give

examples. Also, the telephone interviews added further information and clarity. The qualitative data provided a more detailed understanding of participants' views and countered potential rating scale biases in responding. Concerning this kind of self-report data, Collins and Holton's (2004) meta-analysis found that objective effect sizes were significantly higher than the subjective effect sizes, suggesting that participants (self-rating regarding managerial-leadership skill improvement) may either not perceive changes in themselves as quickly as supervisors and subordinates or that some people are more self-critical and do not rate themselves as highly as others may.

Lastly, due to the small sample size, content validity of the measures utilised, via factor analyses (to test convergent and discriminant validity), could not be performed due to a sample size less than the required 300 participants and inadequate ratio of sample (n) to item numbers.

Future research

Further research is required into the transfer generalisation-maintenance construct and into its operationalization and measurement as separate phases that may occur concurrently, to confirm discriminant and construct validity. In particular, there is a need to assess separate skills within the leadership skill-set learnt in training and examine if some sub-skills transfer more quickly than others; and examine if once transferred, some sub-skills are maintained to different degrees or lengths of time after training. The results would also have important implications for further understanding individual and organisational factors, and potentially training-related factors, which might differentially influence the training transfer (generalisation and maintenance) of these different skills. These areas need further investigation.

Longitudinal studies with larger samples would be useful for comparing factors related to generalisation and maintenance of skills over longer periods of time than assessed in this study (e.g., six and 12 months) with multiple sources to measure transfer generalisation and

maintenance, as recommended by several researchers (Baldwin & Ford, 1988; Burke & Hutchins, 2008; Taylor, Russ-Eft, & Taylor, 2009). Further research is also needed to investigate whether the same or similar differences in relevant transfer generalisation and maintenance influencing factors are evident in other types of leadership or interpersonal training, as well as other types of skills (e.g., complex hard or technical skills).

The organisational factors affecting transfer generalisation and maintenance in this study suggest that future research should focus on ways that organisations can support the transfer-generalisation and maintenance of leadership skills. For example, with practical recommendations for greater managerial and peer support and opportunity to practise and use new leadership skills. Effective performance and leadership development feedback needs to be specific, constructive and development-oriented (Day, 2001). Future studies could involve coaching managers to improve their performance feedback and/or how to support and mentor employees effectively when they return to the workplace after completing a leadership program.

5.8 Conclusion

Muyia and Kacirek (2009) emphasize the importance of providing tangible evidence of the impact of training in organisations, such as return-on-investment in the form of KSA training-transfer. This is especially important in managerial-leadership development as it can potentially affect every aspect of an organisation. This study examined the transfer generalisation and maintenance of managerial-leadership skills in the workplace; with findings that have both theoretical and practical implications. The findings suggest that individual and organisational factors influence the two phases of training transfer differently for complex skill-sets like leadership. This study found that individual factors were more influential immediately after training for transfer generalisation; that both individual and organisational factors were influential

for longer-term transfer generalisation, and that organisational factors were more influential for maintenance of skills once they had been transferred to the workplace after training. An increased understanding of the role individual and organisational factors play may assist organisations in increasing the degree of transfer generalisation and maintenance of skills in the workplace, and accordingly increase the return on training investment.

Chapter 6: Discussion and Research Conclusions

6.1 Thesis aims

The principle aim of this dissertation was to investigate factors that influenced the transfer generalisation and maintenance of skills acquired from training to the workplace. The research focused on interpersonal skills, on the supposition that the differences between skills would influence how easily or otherwise the skill could be transferred and maintained.

The focus of this thesis was workplace transfer at an individual level in relation to individual and organisational factors. Although there is a body of research on the transfer of education-based learning, on training-related factors, and at a team-based level, it was outside the scope of this dissertation to examine these areas. Similarly, it must be acknowledged that other factors that were not examined may play a part in influencing training transfer. For example, organisational culture, which is based on values, beliefs and assumptions shared by employees organisation-wide (Chatterjee, Pereira & Bates, 2018) and the power and status structures within it, may impact on the transfer of trained skills to the workplace.

Gaps in training transfer research have been addressed in this thesis. This was achieved via a series of studies investigating the relative influence of multiple factors on the transfer generalisation and maintenance of conflict management and leadership skills. The theoretical and practical implications of this dissertation, as well as considering its overall strengths and limitations, with recommendations for future research are considered and discussed after a brief review of its four studies.

6.2 Review of studies

This dissertation includes four studies. Different study designs were applied, including cross-sectional (Study one), retrospective (Studies two and three) and longitudinal (Study four), to examine multiple factors that influence training transfer, in terms of its two phases generalisation and maintenance, of conflict resolution (Studies one and two) or managerial-leadership knowledge and skills (Studies three and four).

Participants across the studies included undergraduates part-way through completing their respective degrees prior to commencing their healthcare professions and current healthcare professionals (Studies one and two), all of whom undertook conflict resolution training. Aspiring leaders and experienced manager-leaders undertaking managerial-leadership training participated in Studies three and four.

Data collection included post-training hard-copy surveys (Study one), online retrospective surveys (Studies two and three) and pre- and post-training surveys, with a three month follow-up survey and interviews (Study four). These variations in method were designed to examine different aspects of transfer generalisation and maintenance of the two interpersonal skills under investigation. Within these different designs, multiple-item scales and opened-ended questions were utilised to gather data via a mixed methodology to obtain a better understanding of the factors examined.

Study One

Study one, entitled *Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and perceived impact of learning conflict resolution skills*, examined the cross-sectional results of conflict resolution transfer generalisation over three

weeks. The aim of Study one was to address the lack of training transfer research on conflict resolution training.

This was the first study to examine attitudes to IPL, motivation-to-learn and transfer generalisation of conflict resolution skills concurrently, with significant findings. This study contributed to training transfer research by highlighting the importance of relevancy (in terms of clinical placements), motivation and attitudes to learning in the context of conflict resolution skills training; an area where there is minimal research.

Study Two

The second study, entitled *Factors that influence the transfer generalisation and maintenance of conflict resolution programs of healthcare training and development units: a retrospective study,* examined transfer generalisation and maintenance of conflict resolution skills from numerous nationally standardised training programs completed within a three year period prior to the evaluation. The aim of Study two was to examine conflict resolution training programs in applied settings over a longer period of time than examined in Study one. Study two examined multiple individual and organisational factors.

Both individual and organisational factors were associated with transfer generalisation and maintenance; namely motivation-to-transfer, goal-setting cues and perceived support. Results also supported the examination of emotional intelligence in regards to the transfer of conflict resolution skills. In view of the results of Study one where contextual relevancy of training was important, medical officers' greater reported transfer generalisation may be attributed to training design specificity.

Study Three

The third study was entitled *Factors that influence the transfer generalisation and maintenance of managerial-leadership skills: a retrospective study.* The aim of this study was to extend the second study in the context of leadership training. Study three examined the same set of individual and organisational factors. Training characteristics remained relatively constant over time in comparison to Study two as it examined transfer in reference to one training program. Participant perceptions of transfer generalisation and maintenance of leadership skills were explored retrospectively up to 14 years after training attendance.

The results of Study three confirmed the results of Study two. That is, that different types of factors were associated with transfer generalisation in comparison to the maintenance of managerial-leadership skills; while motivation-to-transfer and perceptions of support were associated with both transfer generalisation and maintenance, highlighting their importance for both processes. Results also supported the examination of emotional intelligence in regards to the transfer of leadership skills.

Study Four

Study four, entitled *Individual and organisational factors that influence transfer generalisation and maintenance of managerial-leadership programs,* examined the influence of individual and organisational factors on the generalisation and maintenance of leadership skills. Mostly the same individual and organisational factors were examined as in Studies two and three (with the exception of intrinsic motivation, organisational commitment and emotional intelligence due to statistical power). In addition, the individual factor, transfer implementation intentions, was examined which has had recent significant findings (e.g., Sankey & Machin, 2014).

The aim of Study four was to address some of the potential limitations of Studies two and three. It examined leadership skill transfer longitudinally over three months, with before, after and three month follow-up surveys and interviews, in relation to employees of one organisational department. This held the organisational transfer climate and cultural influences relatively constant in comparison to the previous two studies.

Results found that only individual factors predicted transfer generalisation immediately after training completion; while both individual and organisational factors predicted transfer generalisation three months after training completion, when participants had returned to work. Only organisational factors predicted maintenance of leadership skills three months post-training.

6.3 Implications

Training transfer (generalisation and maintenance) is researched in various fields of literature including psychology, human resource management and development, instructional design, human factors, knowledge management, management, business, training and adult learning (Aguinis & Kraiger, 2009) in various situations, settings and time intervals (Blume *et al.,* 2010). In spite of this, there are noticeably less studies that have examined the influence of multiple factors on the transfer generalisation and maintenance of the interpersonal skills, conflict resolution and leadership.

This thesis utilised these diverse perspectives and theories to examine and understand how employees generalise and maintain newly learnt skills in the workplace, as recommended by Baldwin *et al.* (2017). Theories including those pertaining to motivation, self-efficacy (*i.e.,* social cognitive theory: Bandura, 1986), and intrinsic motivation (*i.e.,* self-determination theory: Deci & Ryan, 2012) as well as learning theories such as identical elements theory (Thorndike, 1901)

have informed the theoretical discussion on training transfer and the development of hypotheses for the four studies herein.

The main contribution of this thesis was that it provides preliminary evidence that transfer generalisation and maintenance are two distinct phases which may potentially overlap for complex sets of skills like those associated with conflict resolution and leadership. That is, different skills within a skill-set may transfer at different rates with some being generalised while others, where a level of competency has been achieved, are maintained. This emphasis on the two phases of training transfer may explain different findings in the research literature, particularly with respect to the influence of various factors.

The second main contribution of this thesis was to focus on the research on particular types of skills, namely soft skills as opposed to hard skills. Conflict resolution and leadership skills, in particular, are learnt and utilised through guiding principles and abstract theories which need to be adapted to each situation and work context (Franke & Felfe, 2012). This type of learning impacts the difficulty associated with the transfer generalisation and maintenance of these types of skills (Franke & Felfe, 2012). Interpersonal skills such as conflict resolution and leadership are not as commonly researched as other types of skills in training transfer research; a gap that this thesis has addressed.

The third major contribution of this thesis, both theoretically and practically, was the identification of different combinations of individual and organisational factors that were found to influence the transfer generalisation and maintenance of conflict resolution and leadership skills. While both individual and organisational factors were important for both processes, the results suggested that individual factors were relatively more important for transfer generalisation immediately after training. Furthermore, both individual and organisational factors were important for transfer generalisation as time passed following training completion and employees

returned to work. In a general sense, organisational factors were more important for the maintenance of skills. This may explain some of the divergent findings in the research literature where time is the key difference or component following training completion. Thus some studies carried out relatively soon after training were likely examining factors affecting transfer generalisation. Conversely, those studies that examined transfer sometime after training completion may have been examining both transfer generalisation of some skills acquired as well as potentially maintenance of other skills.

The fourth major contribution of this thesis was the examination of training transfer via a mixed method approach by the collection of both quantitative and qualitative data. This has added to the rigor and uniqueness of the studies herein. Qualitative research methods complement those of quantitative research as they expand and enhance understanding (Eddy, 2015) of the meaningfulness of the transfer experience. This provides added evidence that provides insight into different perspectives (Eddy, 2015; Popay & Williams, 1998) to understand training transfer more fully from the perspective of the trainee. A perspective recommended by Ford *et al.* (2018) in their review.

Lastly, an additional contribution of this thesis was the examination of the possible relationship between the individual factor, emotional intelligence, and the generalisation and maintenance of conflict resolution and leadership skills to the workplace. Emotional intelligence has not been examined previously as a possible influence on the transfer of the interpersonal skills, conflict resolution and leadership.

The theoretical and practical implications of these contributions will be discussed in more detail in the following sections.

Transfer generalisation and maintenance of complex skill-sets

The first aim of this thesis was to examine the two phases of training transfer, generalisation and maintenance, concurrently in the same study. This was achieved by focusing on the definition of training transfer and how it was operationalised. Studies two, three and four examined both transfer generalisation and maintenance. By examining them in this way, the complexity of applying a multifaceted set of skills and then maintaining that skill-set over time was able to be taken into account.

The application of applying complex new knowledge and skills is influenced by multiple individual factors, including individual motivation, effort, interest, experience, and ability, before and after attending the training. On return to work, employees are influenced by organisational transfer climate factors such as contextual relevancy, manager and team support or opportunity and time to practice. These will be emphasised or negated to different degrees, leading to different skills within a skill-set being practiced, supported or neglected depending on the organisational climate at work. Consequently, some skills will be learnt and implemented more quickly than others. Participant comments across the four studies regarding enablers or barriers to skill utilisation supported this premise.

The results suggest that measuring either transfer generalisation or maintenance in the relatively short term (e.g., three to six months) would need to be undertaken with care to ensure there is no confusion about what is being measured at each time-point. For example, individuals may be practicing some skills while maintaining others at the three month mark. Six months after training, they may be maintaining skills they have successfully transferred while struggling with or neglecting others that have become irrelevant in their work role. However, opportunities in the workplace change over time (e.g., role change or promotion) giving the trainee new opportunities to practice skills they had not had the opportunity up until that time to use or practice. Hence the

possibility of trainees attempting to practice and generalise skills to the workplace sometime after training should not be overlooked. As Baldwin *et al* (2011) suggests, it isn't sufficient to replicate a skill or discuss what it entails. Effective, competent skill utilisation, at suitable times and in appropriate situations, is paramount, especially important in relation to conflict resolution and leadership skills.

Competency in skill utilisation is key (Rodolfa, Bent, Eisman, Nelson, Rehm & Ritchie, 2005). Schoonenboom, Tattersall, Miao, Stefanov & Aleksieva-Petrova (2008) discuss different levels of competency, from novice, advanced beginner, intermediate, to being deemed competent, progressing to proficient and finally, expert. This clarification of competency in training transfer would assist with its operationalisation. That is, transfer definitions should include attaining a level of skill-demonstrated competency in the workplace which is maintained or increased with levels of proficiency over time. This difference needs to be operationalised in terms of how transfer is measured, relative to when it is measured after training.

Defining levels of competency with respect to conflict resolution or leadership skills is important. Individuals may potentially choose sub-optimal leadership strategies, methods or behaviours due to lack of motivation, cognitive resources or processing time to apply their knowledge and determine the best course of action (Baldwin *et al*, 2011). Baldwin *et al.* (2011) refers to this as the ability to "act in the moment" or "do it when it counts" (p. 587). This must be considered when researching training transfer and thus be reflected in its future assessment and measurement.

The Dynamic Transfer Model suggested by Blume *et al.* (2019) highlights the iterative and evolving nature of training transfer as it unfolds over time under the influence of various people, contexts and situations. These influences will either promote or hinder the ability and motivation of employees attempting to generalise and maintain skills, over multiple transfer

attempts. Blume *et al.* (2017) suggest that training transfer research has been restricted by its focus on short-term transfer outcomes, typically measured at one point in time; thus recommending a longer term and dynamic perspective; a point reiterated by Ford *et al.,* (2018). The studies herein complement Blume *et al.'s* (2019) model as they demonstrate that while transfer generalisation and maintenance may occur as two successive processes for particular skills within a skill-set, they may also overlap or occur concurrently. Hence, in relation to the Dynamic Transfer Model, where they illustrate one strand of training transfer being attempted in the contexts of individual differences and work environments over time, this thesis suggests there are likely to be multiple strands of transfer attempts occurring concurrently for each of the different skills within a complex skill-set. This perspective of training transfer of conflict resolution and leadership is supported by the participants' comments in each of the studies herein.

Hence, in reference to the Dynamic Transfer Model (Blume *et al.*, 2019), each skill strand within a skill-set may differ in either its starting point (acknowledging the building on of skills over time as commented on by Ford *et al.*, 2018) or on its time trajectory. Contextual influences and levels of difficulty and effort required will likely influence the amount of time needed to demonstrate behaviourial competency in a particular skill. This conceptualisation illustrates how skills may be at different stages along the training transfer continuum, in different stages of generalisation and maintenance. Blume *et al.* (2019) Dynamic Transfer Model illustrates integration, modification, retention or discarding of skills, dependent on the influences of individual factors and work environmental contexts. Based on the findings of the studies undertaken herein, it is suggested that Blume *et al.* consider adding to their model an acknowledgement that some skills may have been generalised and/or a level of competency reached that is being maintained through the dynamic, iterative process.

This emphasis on understanding training transfer as having two phases (transfer generalisation and maintenance) has implications for how training transfer is both conceptualised and operationalised in future research, particularly in relation to how it is measured and when. By examining these two phases of training transfer in sequence and simultaneously, some of the inconsistent results found previously in the training transfer research could be explained; a situation that had been referred to as the "transfer problem" (Baldwin *et al.,* 2017, p17).

From a practical organisational perspective, the results of this dissertation have implications for the way organisations may increase their return of investment from training and development. Organisations can maximise relevant factors that facilitate both the transfer generalisation phase and maintenance of skills phase of training transfer. This emphasis on differences between the two phases will enable organisations to develop strategies relevant to each phase and thereby increase the impact and longevity of their training investment.

For example, to facilitate transfer generalisation, consideration can be given to ensuring individual factors like motivation-to-transfer and transfer implementation intentions are assessed and that steps are taken to maximise them prior to and at the end of training. To facilitate both transfer generalisation and maintenance, once trainees are back in the routine of their work, consideration can be given to organisational factors such as support by managers, with opportunities to practice and use specific skills from the training program incorporated into the trainee's daily work schedule.

Individual and organisational factors relating to interpersonal skills

The second aim and contribution of this thesis was to focus training transfer research on the interpersonal skills of conflict resolution and leadership, as soft skills have been researched less commonly and are reported to be more difficult to transfer than hard skills (Laker & Powell,

2011). Furthermore, the third major aim and contribution of this thesis was to examine multiple factors that influence training transfer. While there is a large body of research which has examined examples of each of the three categories of factors (*i.e.,* individual, training and organisational), there are noticeably less that have examined the influence of these factors on the transfer generalisation and maintenance of conflict resolution and leadership skills, or that have considered multiple factors (e.g., several individual and organisational factors concurrently) in one study. The studies in this thesis addressed these gaps in training transfer research.

Individual and organisational factors that had found support in past research were generally found to be related, but not always predictive of, transfer generalisation and/or maintenance outcomes relative to conflict resolution and leadership skills. Several findings herein, for example those relating to motivation-to-transfer and transfer implementation intentions, were consistent with previous research (e.g., Franke & Felfe, 2012; Gegenfurtner *et al.,* 2009b; Krishnamani & Haider, 2016; Machin & Fogarty, 1997; Machin & Fogarty, 2004; Sankey & Machin, 2014).

When considering all factors that may predict transfer generalisation and maintenance outcomes, a pattern of significant factors emerged across Studies two to four. That is, when examining training transfer retrospectively (Studies two and three), motivation-to-transfer and perceptions of organisational support were important in transfer generalisation, as perceptions of organisational support was in Study four. This supported previous research into these individual and organisational factors (Baldwin *et al.,* 2011; Chiaburu *et al.,* 2010; Franke & Felfe, 2012; Gegenfurtner *et al.,* 2009b; Grossman & Salas, 2011; Krishnamani & Haider, 2016).

The combination of both individual and organisational factors was associated with transfer maintenance in Studies two and three. In Study four, factors found to predict transfer maintenance three months after completion of leadership training were all organisational factors

(e.g., opportunity to use and perceptions of organisational support). The fourth study also highlighted that individual factors are important immediately after training completion but that both individual and organisational factors were important when trainees returned to work and as time progressed post-training (three months).

The analysis of qualitative data across Studies two, three and four generally confirmed results obtained following analysis of quantitative data. The importance of organisational support in the form of shared-reflection, language and knowledge-sharing, and positive feedback from managers, team members and other program alumni to enable transfer generalisation and maintenance of new conflict resolution or leadership skills was confirmed. This finding is consistent with other research regarding managerial/peer support (e.g., Chiaburu *et al.*, 2010; Grossman & Salas, 2011; Ford *et al.*, 2018; Rouiller & Goldstein, 1993; Sørensen, 2017; Thayer & Teachout, 1995). Moreover, responses to open-ended questions emphasised the importance and enabling effects of shared language, knowledge and understanding of key concepts and theories that were provided by managers who had completed the same program as the trainees. Similar results were also found by Watkins *et al.* (2011) and Dugan *et al*. (2014); and similarly regarding mentoring and networking (Romaniuk & Haycock, 2011) in Studies three and four.

While there is a large body of research exploring factors that influence training transfer, they have not examined either the number of individual and organisational factors concurrently as examined in this thesis nor have they examined transfer generalisation and maintenance of soft skills in the same study. As Axtell *et al.* (1997) suggest, while individual and organisational factors are both important post-training, they play different roles in the immediate period post-training to that they play as time passes. Studies two, three and four demonstrated some of these differences; making an important contribution to research in terms of its implications for theory and practice.

Motivation-to-transfer

There are only a few studies which have examined the influence of motivational factors on the training transfer of leadership skills to the workplace (e.g., Awais *et al.,* 2014; Franke and Felfe, 2012; Gentry, Eckert, Munusamy, Stawiski & Martin, 2014; Gilpin-Jackson & Bushe, 2007). However, no studies were found which specifically investigated motivation-to-transfer in relation to the transfer of conflict resolution skills. Massenberg *et al.* (2017) assert that motivation-to-transfer is essential for transfer to occur as without it, trainees are unlikely to put effort into applying new skills. The studies reported in this thesis addressed this gap in research.

From a practical organisational perspective, the results obtained have implications for staff training and development in interpersonal skills. For example, organisations could assess employees' motivation prior to training as an enrolment criteria. Alternatively, it could develop strategies to enhance motivation prior or during training. As Massenberg *et al.* (2017) suggest, if organisations understand how to motivate their staff to generalise and maintain skills post-training, they are more likely to optimise the benefits of the training they invest in. The results of Studies one, two, and three regarding motivation are consistent with those of Chiaburu *et al.* (2010), Gegenfurtner *et al.* (2009b), and Kontoghiorghes (2002) and contribute to understanding the role of this individual factor for both transfer generalisation and maintenance.

Transfer Implementation Intentions

Transfer implementation intentions (TII) is a relatively new individual factor in research on training transfer. TII concerns an individual's intentions and/or commitment to behave in particular ways when transferring skills from training to the workplace (Machin & Fogarty, 2004). For example, the extent to which individuals may plan to use strategies to achieve their training goals (Sankey & Machin, 2014).

In the fourth study, TII was examined in relation to transfer generalisation and maintenance of managerial-leadership skills in the workplace from two different leadership programs. It was identified that TII (post) correlated moderately with transfer generalisation (both immediately and three months after training) and maintenance. It also predicted transfer generalisation of leadership skills over time (immediately and three months after training).

These results are consistent with research on other types of skills, such as those investigated by Machin and Fogarty (2003) (e.g., mandatory training regarding manual handling of people, workplace health and safety, infection control and fire safety) and by Sankey and Machin (2014) (regarding non-mandatory HR, information communication technology, and academic teacher training). Machin and Fogarty (2003) stress that transfer is unlikely to occur if trainees do not have any intentions to transfer their new skills. Study four suggests that this less well-established individual factor may have an important role in relation to the transfer generalisation of interpersonal skills related to conflict resolution and leadership, a role that had not been previously examined.

These findings have important practical implications. For example, organisations and/or training developers may potentially heighten employee training transfer by assessing their intention to transfer learning to the workplace prior to training and by taking steps to increase this intention before, during and after training. This could occur by arranging increased organisational support (e.g., manager's support to set goals) or as a part of formal training attendance applications (e.g., description of training transfer goals and strategies to implement post-training, in their training attendance application). Organisational strategies that increase employee transfer implementation intentions could thereby enhance relative return of training and development investment.

Relevancy

Relevancy is relatively subjective. What may be deemed relevant skills by organisations, training and development consultants, managers, academics or even training needs analyses based on job-roles, may not be considered relevant by the individuals undertaking the training. For example, in Study one, medical students were less motivated-to-learn, had less positive attitudes to interprofessional learning (IPL) and reported less transfer generalisation of conflict resolution skills than their nursing counterparts. This was attributed to medical students' perception that the conflict resolution skills lacked relevancy at the time in their undergraduate degree in contrast to the nursing students who were on placement.

Although research has indicated the need for conflict resolution skill training in healthcare professional degrees for effective and safe healthcare decision-making (Brinkert, 2010; Katz, 2007; Rao, Parker & Baile, 2009), Study one's results suggest that training transfer is more likely when the skills are overtly relevant and likely to be used in the short term. Thus Study one contributed to a better understanding of the role of perceived relevancy, by highlighting how it may be shaped by context. This is consistent with Lim and Morris' (2006) study which found that the trainees' immediate needs to use the training content on the job were influential in affecting both perceived and actual learning and transfer.

These results support previous research that emphasise the importance of a training needs analysis prior to organisational training development (e.g., Brown, 2002; Reed & Vakola, 2006) to assess relevancy of the skills. However, Study one's results also suggest that although particular skills may be assessed as required for employee roles, it is important to clarify if they are deemed important and relevant prior to training by the trainees themselves.

Relevancy was also highlighted in the comments made by participants of Studies two and three which examined conflict resolution and leadership skills retrospectively, and in Study four

pre/post-training evaluation. These comments emphasised that relevancy of skills to particular roles and working contexts was important for the maintenance of skills over time. For example, although conflict resolution skills may be deemed highly relevant to particular work-roles, individuals may not recognise their importance or may not recognise that they have deficits in these skills, thereby influencing perceptions of relevancy and impacting transfer outcomes.

In Study three, which examined leadership skills, participants commented that the skills they found useful and relevant were the ones that they had maintained over time; emphasising the link between utility and perceived relevancy with maintenance of skills. In Study four, participants also commented on the lack of opportunity to practice skills that were not directly relevant to their role (e.g., not having a team to lead). The perceived relevancy of the skills to their respective work-roles governed which skills they utilised at that point in time, impacting on both the transfer generalisation and maintenance of the leadership skills. Interestingly, the emphasis of comments in Study three was generally on the positive rather than the negative; highlighting skills which were relevant and used currently, rather than those that were not used or were no longer considered relevant. Conversely in Study four, participants commented more on the lack of relevancy or opportunity.

This has practical implications for organisations. Although particular skills may be deemed inspiringly or strategically relevant through job-analysis for organisational roles, there is a need to ensure that individual employees perceive its relevance in the same way at that moment in time. Organisations need to take care to communicate information about the importance of particular skills. Establishing employee 'buy-in' would be key, especially to those who are committed to the organisation. Open-ended responses highlighted the impact of trainee perceptions of skill relevance and the extent to which they attempted to transfer or maintain skills over time.

Opportunity to practice and use

Opportunity to practice and use skills was a factor highlighted in responses to open-ended questions in Study one, and in the results of both the quantitative and qualitative data analyses in Studies two, three and four. In Study one, both nursing and medical students commented on the lack of opportunity to practice the conflict resolution skills learnt. In Study two, the importance of opportunity to practice and use skills was reflected in the comments made. Also, part-time employees reported significantly lower maintenance of conflict resolution skills since completing the training than others in the study. This was likely due to spending less time at work and thus, having less opportunity to practice and use the skills. Study three found that opportunity to use was a significant associated factor of the transfer generalisation of leadership skills. In Study four, opportunity to use was also a significant predictor of transfer generalisation and maintenance of leadership skills three months after training.

Across the four studies, responses identified in qualitative data highlighted the importance of opportunity to practice and use new skills at home or on placement (Study one) or at work (Studies two, three and four). It was both positively (*i.e.*, being able to transfer/maintain skills because opportunities were present) and negatively (*i.e.*, being unable to transfer/maintain skills because opportunities were not present) reported. Participants' responses highlighted that the context and perceptions of opportunity were important; in that what some perceived as an opportunity, others did not. This finding was particularly apparent among participants of the interviews in Study four. These results are consistent with Gilpin-Jackson and Bushe's (2007) study regarding leadership skills; and previous research such as Ascher, (2013), Daffron and North (2006), and Grossman and Salas (2011). Skills, whether soft or hard, require opportunities to practice and be used in order for proficiency in their application to be attained.

Like other skills, conflict resolution and leadership skills require opportunities to practice and be used. Implications for organisations are that opportunities need to be incorporated into trainees' work on their return after training, to optimise transfer of new skills initially and maintenance of skills afterwards. As suggested by Browne-Ferrigno and Muth (2006), organisations need to plan employee development longitudinally, incorporating formal support and opportunities, across employee tenure for both individual training transfer and for organisational training resources to be optimised. Watkins *et al.* (2011) also suggest that learning is an ongoing social and reflexive process with an ongoing trajectory; rather than a one-off event.

Perceived Support and Barriers

This thesis examined both the larger workplace context of systematic organisational support and trainees' perceptions of support/barriers encountered which few studies have examined in combination (Chiaburu *et al.*, 2010). The studies reported in this thesis consistently found that perceived support and barriers were related to training transfer (generalisation and maintenance) through the quantitative and/or qualitative data. For example, the lack of organisational support was found to hinder transfer generalisation in Studies two and three; and the lack of organisational support hindered transfer maintenance in Study three. Further, the presence of organisational support predicted both successful transfer generalisation and maintenance in Study four.

Organisational supports included those provided by managers, colleagues, teams and other training alumni, both during and after the training. These results, including the strong emphasis on the importance of organisational support apparent in the responses to the open-ended questions and interviews in the three later studies, are consistent with other studies regarding skill transfer (e.g., Axtell *et al.*, 1997; Chiaburu *et al.*, 2010; Grossman & Salas, 2011;

Sørensen, 2017; Thayer & Teachout, 1995). Gegenfurtner *et al.* (2009b) stated that organisational support for training and the way it is framed communicates the organisation's expectations, promotes learner readiness and leads to enhanced transfer-motivation. Hence trainees' perceptions of support and/or barriers likely influenced their motivation-to-transfer new skills in the same way.

Interestingly, there was an emphasis in the qualitative data (Studies three and four) on networking with others in the organisation, both during and after the training, as a positive supportive outcome of the leadership training. This may reflect the particular importance of networking relative to managerial-leadership roles. Other research has also found that mentoring, networking and connecting with peers in the workplace after training was important for leadership development (Romaniuk & Haycock, 2011).

Responses from the open-ended questions also emphasised the importance of organisation-wide training implementation initiatives. Comments referred to the inspiration and support received from managers and other staff who had completed the same leadership training. This supports results reported by Gilpin-Jackson and Bushe (2007) who emphasised the importance of making the "evidence of transfer" visible to trainees as it impacts skill utilisation and judgments related to the value of training. They assert that leadership training transfer is best supported when many employees go through the training at about the same time.

With respect to transfer generalisation and maintenance in organisations generally, the results of Studies two, three and four are consistent with Ascher's (2013) recommendations to improve organisational transfer climates by providing staff with supportive processes and cues when they attempt to implement new skills in the workplace. The studies herein found that although both individual and organisational factors were important, organisational factors, especially in the form of perceived support to transfer, tended to be more predictive of training

transfer once trainees had returned to work. These results have implications for organisations in regards to how they support staff before and after training to increase transfer of conflict resolution and leadership skills. This is especially important in light of the potential detrimental effects conflict can have in particular roles, such as on professional decision-making when providing patient-care or managers when dealing with staff.

Emotional Intelligence

The last aim of this thesis was to examine emotional intelligence (EI) in relation to the transfer generalisation and maintenance of conflict resolution and leadership skills. Gist *et al.*, (1991) assert that effective performance on cognitive and interpersonal tasks depends on the ability to mobilise both individual intellectual and emotional-coping resources. They suggest that complex interactions and interpersonal tasks, such as resolving conflict and demonstrating leadership, require the ability to manage emotions effectively to deal with unpredictable, interdependent events which are inherent with high levels of emotional demand. However, McEnrue, Groves and Shen (2010) were highly critical at that time of some research conducted regarding EI training, asserting that in this field most published reports did not provide any quantitative data to support results described; and that they were "…wholly prescriptive in orientation, entirely anecdotal in nature, and/or completely atheoretical in terms of research foundation" (p19). This thesis has contributed to research with its examination of a quantitative validated measure of EI in relation to transfer generalisation and maintenance of interpersonal conflict resolution and leadership skills.

In the studies that examined emotional intelligence (Studies two and three) it was found that the abilities to *regulate one's own emotions* and *appraise other's emotions* were associated with both transfer generalisation and maintenance of conflict resolution skills in Study two. The

ability to *use one's own emotions* predicted transfer generalisation (prior to organisational factors being included in the analysis) of leadership skills in Study three. Also, three of the four emotional intelligence abilities, *use of own emotions, regulation of own emotions* and *others' emotional appraisal,* generally correlated with either transfer generalisation or maintenance of leadership skills, or both (Study three). The EI ability, *self-emotional appraisal,* did not correlate with either transfer generations or maintenance.

This thesis has contributed to research on EI as it has not been examined previously in relation to the transfer of interpersonal skills such as those involved with conflict resolution and leadership. Although it was expected that all four EI abilities (*i.e., usage and regulation of one's own emotions,* and the *appraisal of own and others' emotions*) would influence both transfer generalisation and maintenance of conflict resolution and leadership skills, these findings highlight a relationship between EI and training transfer.

Rode *et al.* (2007) found strong evidence linking EI both directly and indirectly, as moderated by motivation, to individual performance (such as interpersonal effectiveness and general academic performance). They reported this was notable given that academic success includes a much wider array of performance contexts, expectations and relationships over the long term. The relationship found between EI and transfer maintenance in this thesis supports a link between EI and performance over time.

Hackman and Wageman (2007) suggest that leading and managing people well requires a considerable degree of emotional maturity in dealing with one's own emotions and those of others, and being able to inhibit impulses to act. According to Baldwin *et al.* (2011), more research is needed in the assessment and development of ability-based EI as some researchers have suggested that it underlies managerial competence. For example, Dearborn (2002) argues that interpersonal development programs fail to deliver adequate return on investment to

organisations by failing to produce sustainable behaviour change in participants because of the absence of EI competence skills being incorporated into the training. However, the relationship between EI and training transfer outcomes had not been examined previously. Studies in this thesis addressed this gap and provided preliminary support for EI being related to training transfer. In addition, aspects of EI positively predicted the transfer of conflict resolution and managerial leadership skills to the workplace.

Although more research is required to examine the relationship between EI and training transfer of interpersonal skills, there are potential implications if these findings are replicated. Organisations, and training and development consultants could use a measure of EI to recruit trainees who are higher in EI to participate in conflict resolution and leadership training, with the view to enhance return-on-investment by spending resources on trainees who have a higher likelihood of generalising and maintaining new interpersonal skills. It may also be beneficial for trainees to first attend EI training to increase the training transfer of conflict resolution or leadership skills from subsequent training programs, as there is evidence that EI can be taught and improved (Dugan *et al.*, 2014). These results, if replicated, suggest that measures of EI and training in EI might be used to facilitate both transfer generalisation and maintenance of conflict resolution and leadership skills.

6.4 Strengths and limitations

The main strength of the research reported in this thesis was the use of a theoretical perspective that examined training transfer through the phases, generalisation and maintenance, to better understand the mixed and inconsistent findings reported in past research. The review

included literature across a range of different disciplines, thus gaining a broader perspective of the research questions of interest.

A second area of strength was the collection of both quantitative (e.g., multi-item scales) and qualitative (e.g., interviews) data across the four studies. All of the four studies provided opportunities for participants to comment freely. This method allowed participants to expand upon and explain responses to other items in the survey, assisting to triangulate data and balance any potential limitations. Additionally, the design of Study four, utilising a longitudinal study design with pre- and post-training surveys and three month follow-up (survey and interviews) added to the methodological strength of the thesis overall. Other methodological strengths include the relatively large sample sizes in Studies one and three; the use of multivariable linear regression analyses in all the studies, and the use of multiple studies that allowed for extension of findings from one study to the other.

Another important strength is that three of the four studies were field studies. They examined conflict resolution and leadership skills to be transferred to South Australian organisations; not laboratory studies. Though Study one examined transfer generalisation in relation to University students, it had real life application associated with their clinical placements, which are equivalent to workplace contexts. This aspect of the research design may be considered a strength.

Another area of strength is the research topic (*i.e.*, training transfer and maintenance of conflict resolution and leadership skills). As Axtell *et al.* (1997) assert, interpersonal skills represent qualities which are extremely difficult to measure objectively. They are therefore not commonly examined in training transfer research compared to other types of skills, such as skills associated with computer software utilisation.

There were research limitations associated with this series of studies that should be considered. The first is in relation to the methodological design, such as the retrospective study design (of Studies two and three), sample size, use of self-report data and the absence of control groups or random assignment. There are concerns in the literature about self-report data (e.g., Day, 2001; Taylor *et al.*, 2009). Participants may be prone to impression management, or may exaggerate or limit self-attributed beliefs, attitudes, traits, improvements or failings. Hence these results need to be considered in light of this.

When research is conducted in applied settings outside of the laboratory such as the studies reported in this thesis, it may be vulnerable to extraneous factors. Research design may need to be adapted to circumstances outside of the researchers' control. Organisational permission was required to gain access to training participants in relation to those outlined earlier in Chapters 2, 3, 4 and 5. This necessitated compromises in study design. For example, these constraints resulted in the absence of control groups and random assignment, as well as restrictions on survey length and/or included measures in the studies herein. Sample sizes were dependant on either training enrolment or limited by class-size requirements as in Studies one and four; or dependent on being able to contact training alumni via email successfully who were motivated to respond to research invitations, as in Studies two and three. Also, sample size (Study four) reduced the number of variables that could be examined to ensure power in data analyses and reduce the likelihood of Type II errors. These all constitute potential research design limitations which may limit the generalisability of the results. As with all new research findings, the thesis results need to be replicated using optimal research designs whenever possible.

Some researchers have also pointed out concerns of positive bias regarding utilisation of self-report pre-test / post-test measures (e.g., Rohs, 1999; Dierdorff *et al.*, 2010; Petridou *et al.*, 2017) as a possible limitation, which applies to Study four. However, the study design allowed

examination of the associations between the factors of interest with a pre-test, post-test and follow-up. Further, Collins and Holton (2004) suggested in their meta-analysis of managerial-leadership program evaluation studies that more studies utilising a pre/post training design should be undertaken. Furthermore, the contribution and value of self-report data to social-sciences research is recognised widely for its contribution and value (Schwarz, 2004).

All four studies utilised Likert-scale self-report survey measures, thereby the data are open to the possibility of response bias. However, the responses to open-ended questions allowed participants to comment on different aspects of their experiences, expand on reasons and give examples. This data together with the interviews in Study four were useful in providing a more detailed understanding of participants' views and assisted in countering any limitations of this data collection method by being able to triangulate data analysis results. Further, in light of subjective ratings like Likert-scales being perceived to be usually higher than objective ratings, Collins and Holton (2004) point out that this may not always be the case and that participants may be more self-critical or not perceive changes in themselves as quickly as supervisors or subordinates may (thus not rate themselves as highly). Their meta-analytic research allows some added confidence in the findings of this thesis.

There is also a potential limitation associated with the scale utilised to measure transfer maintenance which was developed for these studies, adapted from the training transfer measure developed by Xiao (1996). Factor analysis (for factor, convergent and discriminant validity) could not be conducted in any of the three studies that examined transfer maintenance (Studies two, three and four). The sample sizes and ratio of sample size to number of factors were not sufficient for meaningful results and hence factor analyses could not be undertaken. Hence, these studies need to be replicated with larger samples to confirm scale validity.

6.5 Future research

In the previous chapters of this thesis, the results of four studies were discussed and each suggested further research in particular areas of training transfer relative to the particular study outlined. This section will suggest future research topics based across the four studies. Topics of future research relate to the generalisation and maintenance phases of training transfer; longitudinal research; training transfer of interpersonal skills such as conflict resolution and leadership; and how they relate to emotional intelligence (EI).

Further research is required into both the construct and the measurement of maintenance when compared to transfer generalisation. For example, research designs with large samples (300+ participants) will allow factor analysis of the transfer generalisation/maintenance measures for item evaluation to provide evidence of factor validity, as well as convergent and discriminant validity. This would allow further examination of generalisation and maintenance as separate phases which may occur concurrently by validating their measurement.

Additionally, examination of the different overlapping trajectories of transfer generalisation and maintenance of different skills within complex interpersonal skills would enable further theory development. Longitudinal studies with larger samples and with multiple time-points, would be useful to compare individual and organisational factors related to generalisation and/or maintenance of skills. For example, a longitudinal study with data collection points at zero, three, six, nine and twelve months' post-training. Such a design could allow better understanding of training transfer by measuring differences and changes in generalisation compared to maintenance of skills over time.

To address possibilities of Likert-scale and response bias limitations, self-report measures should be coupled with other, preferably multiple, sources to measure changes in transfer

generalisation and maintenance post-training, as recommended by several researchers (Baldwin & Ford, 1988; Burke & Hutchins, 2008; Day, 2001; Taylor *et al.*, 2009). For example, together with trainee self-reports, other sources could include the trainees' managers, colleagues, other training alumni, or subordinates.

Further research is also needed to investigate whether the same or similar differences in relevant transfer generalisation and maintenance factors are evident in other types of organisational interpersonal and leadership training; as well as to confirm these results. This is especially important to replicate for conflict resolution training transfer where there is a noticeable lack of research. Research could include examination of competency building over time through subsequent training programs.

The results of the research outlined in this thesis with respect to emotional intelligence and training transfer (generalisation and maintenance) of conflict resolution and leadership skills require replication and further investigation; as well as in respect to the relationship between emotional intelligence and other types of interpersonal skills.

The organisational factors affecting transfer generalisation and maintenance outlined in this thesis suggest that future research should focus on ways that organisations can support the transfer generalisation and maintenance of conflict resolution and leadership skills. Muyia and Kacirek (2009) emphasise the importance of providing tangible evidence of the impact of training in organisations. As Baldwin *et al.* (2017) suggest, there should also be a practical element to such evidence, such as research measuring improvements in organisational systems or processes and how changes effect employees' training transfer efforts. They recommend a research emphasis on 'how' to enhance rather than simply describing the 'what' of relationships between influencing factors and training transfer.

Effective performance and leadership development feedback needs to be specific, constructive and development-oriented (Day, 2001) to serve as an enabling mechanism that facilitates learning (DeRue, & Wellman, 2009). Hence, future studies could involve coaching managers to improve their performance feedback to their staff following training or how to support and mentor employees effectively when they return to the workplace after undertaking leadership training. Lastly, there is a need for further research to investigate the practical implications of this series of studies and to determine the extent to which organisations can assess individual factors and organisational transfer climate factors to facilitate better training outcomes.

6.6 Conclusion

The studies in this thesis were based on the premise that transfer generalisation and maintenance may potentially occur separately yet at the same time, due to the complex set of skills inherent in conflict resolution and leadership. The studies provide preliminary support for this change in understanding transfer generalisation and maintenance. The implications of this change in perspective highlights the simplicity of many training transfer models that have been adopted in the past. Thus, there is a need to acknowledge, at least for complex skill-sets like conflict resolution and leadership skills, that training transfer, with its phases of generalisation and maintenance, is much more complex than such models.

Rather, training transfer is a dynamic, iterative process that incorporates at least two phases (transfer generalisation and maintenance) which may occur simultaneously and with different time trajectories for different skills within a skill-set. To understand training transfer comprehensively, there also needs to be an acknowledgement that there will not be a "one size fits all" in regards to how to generalise and maintain different types of skills successfully, such as

hard and soft skills. The series of studies reported in this thesis has examined the training transfer of conflict resolution and leadership skills. Work is now required to investigate the extent to which the results of these studies can be generalised to the transfer of different types of interpersonal skills.

Further research is also required into both the construct and the measurement of maintenance as distinct from transfer generalisation, to comprehensively examine differences between them and to confirm their construct validity. Finally, what must not be forgotten when developing theory and research, are the practical implications of training transfer research for organisations and the potential benefits of better and more effective training outcomes with increased return of investment.

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Appendix A: Statements of Authorship

Chapter 2 - Study 1

Statement of Authorship

Title of Paper	Exploring undergraduate students' attitudes towards interprofessional learning, motivation-to-learn, and perceived impact of learning conflict resolution skills.
Publication Status	☑ Published ☐ Accepted for Publication ☐ Submitted for Publication ☐ Unpublished and Unsubmitted w ork w ritten in manuscript style
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Principal Author

Name of Principal Author (Candidate)	Sonya Vandergoot
Contribution to the Paper	Designed the study, developed the survey, collected all data and prepared it for analysis. Performed most of the data analyses and its interpretation; wrote manuscript and acted as corresponding author.
Overall percentage (%)	80%
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.
Signature	[redacted] Date 15/3/2018

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Dr Aspa Sarris
Contribution to the Paper	Supervised development of work, helped in study design and manuscript evaluation and editing.
Signature	[redacted] Date 15/3/2018
Name of Co-Author	Dr Neil Kirby
Contribution to the Paper	Supervised development of work, helped in study design and manuscript evaluation and editing.
Signature	[redacted] Date 28/3/18
Name of Co-Author	Dr Helena Ward
Contribution to the Paper	Gave feedback on the development of the study, assisted in qualitative data analysis and journal paper evaluation/feedback.
Signature	[redacted] Date 16/4/18

Chapter 3 - Study 2

Statement of Authorship

Title of Paper	Factors that influence the training transfer and maintenance of conflict resolution programs of Healthcare training units: a retrospective study.
Publication Status	☑ Published ☐ Accepted for Publication ☐ Submitted for Publication ☐ Unpublished and Unsubmitted w ork w ritten in manuscript style
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Overall percentage (%)	85%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature	[redacted]	Date	15/3/2018

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i. the candidate's stated contribution to the publication is accurate (as detailed above);
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Contribution to the Paper	Supervised development of work, helped in study design and manuscript evaluation and editing.		
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Chapter 4 - Study 3

Statement of Authorship

Title of Paper	Factors that influence the transfer and maintenance of managerial leadership skills: a retrospective study.
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Overall percentage (%)	85%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
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Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Dr Aspa Sarris		
Contribution to the Paper	Supervised development of work, assisted in study design, general feedback and manuscript evaluation and editing.		
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Name of Co-Author	Dr Neil Kirby		
Contribution to the Paper	Supervised development of work, assisted in study design, general feedback and manuscript evaluation and editing.		
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Chapter 5 - Study 4

Statement of Authorship

Title of Paper	Individual and organizational factors that influence transfer generalization and maintenance of managerial-leadership programs.
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Principal Author

Name of Principal Author (Candidate)	Sonya Vandergoot		
Contribution to the Paper	Designed the study, developed the survey and telephone interview questions/documents, collected all data, including conducted all the telephone interviews and prepared it for analysis. Performed some of the quantitative data analyses and its interpretation; completed all of the qualitative data analysis & interpretation; wrote all of the manuscript and acted as corresponding author.		
Overall percentage (%)	80%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
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By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Dr Aspa Sarris		
Contribution to the Paper	Supervised development of work, assisted in study design, general feedback and manuscript evaluation and editing.		
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Name of Co-Author	Dr Neil Kirby		
Contribution to the Paper	Supervised development of work, assisted in study design, general feedback and manuscript evaluation and editing.		
Signature		Date	25/10/18
Name of Co-Author	Dr Julia Harries		
Contribution to the Paper	Assisted in quantitative data analyses, general feedback and manuscript evaluation and editing.		
Signature		Date	25/10/18

Appendix B

Study 1: Correlation Table (Chapter 2)

Exploring undergraduate students' attitudes towards interprofessional learning, motivation to-learn, and perceived impact of learning conflict resolution skills.

Variables	n	1	2
1 Training Transfer	88		
2 IPL	83	**.573****	
3 Motivation to Learn	89	**.587****	**.492****

Significance (2-tailed) ** $p < .01$ and shown in bold

Study 2 Correlation Table (Chapter 3)

Factors that influence the transfer generalisation and maintenance of conflict resolution programs of healthcare training and development units: a retrospective study.

Variables	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Training-transfer															
1 Transfer generalisation	36														
2 Transfer Maintenance	36	**.768****													
Individual Factor Measures															
3 Self-efficacy	36	.196	.144												
4 EL-SEA	36	**.342***	.273	.224											
5 EL-OEA	35	**.457****	**.357***	.212	**.765****										
6 EL-UOE	36	.173	.114	252	**.623****	.311									
7 EL-ROE	36	**.495****	**.386***	**.442****	**.483****	**.346***	**.555****								
8 Intrinsic Motivation	35	**.429****	.229	**.457****	.068	**.336***	.045	**.361***							
9 Motivation-to-learn	36	.317	.183	.530**	.154	.293	.157	**.497****	**.647****						
10 Motivation-to-transfer	35	**.631****	**.366***	.225	-.042	.075	-.130	.235	**.661****	**.348***					
11 Organisational Commitment		.171	.014	.262	-.026	-.096	.263	.175	.144	-.008	.178				
Organisational Factor Measures															
12 OTC: Social Cues	36	**.557****	.280	**.344***	.062	.277	.104	.310	.515**	.096	**.454****	**.540****			
13 OTC: Goal-setting	33	**.614****	**.373***	.103	-.134	.032	.037	.091	**.366***	-.056	**.496****	**.376***	**.788****		
14 OTC Opportunity-to-use	36	**.566****	.284	.269	.061	.279	.150	.215	.289	.100	**.486****	.220	**.786****	**.738****	
15 GTCS Org Support (Systems)	36	**.532****	.298	.093	.117	.312	.059	.185	.289	.061	**.402***	.220	**.560****	**.639****	**.656****

Significance (2-tailed) * $p < .05$, ** $p < .01$, and shown in bold

Study 2: Pearson Correlations for independent and dependent variables

Appendix C

Opportunity-to-use scale

The *Opportunity-to-use* scale was developed for this series of studies and was utilised for studies two, three and four (adapted according to the focus of the interpersonal skill examined - e.g., conflict resolution or leadership skills). It was adapted for this study, based on the work of Holton *et al.* (2000) and Thayer and Teachout (1995). It has five items, as listed below.

Opportunity-to-use:

1. I consciously allocated time to practice new skills/strategies learnt in the Conflict Resolution session/training.
2. In my work-unit, when we attend training, workload is redistributed to allow people to put into practice what they learnt.
3. My manager ensures I am able to practice new skills from training programs attended by adjusting my workload accordingly.
4. My work is busy so since attending the training, I have had no/limited opportunity to practice what I learnt (reversed scored)®
5. My workload allows me time to try the new things I've learnt.

Transfer maintenance scale

The *transfer maintenance* scale was developed for this series of studies and was utilised for studies two, three and four (adapted according to the focus of the interpersonal skill examined - e.g., conflict resolution or leadership skills). It was adapted from Xiao (1996) training transfer scale. It has four items, as listed below.

Training Maintenance:

1. I have been able to continue using the conflict resolution strategies and tools I learnt.
2. I have returned to old ways of dealing with conflict. (reversed scored)®
3. I have been able to improve and maintain my conflict resolution skills at work.
4. Overtime, I have found that I have forgotten most of the skills and strategies taught in the conflict program and don't use many of them anymore. (reversed scored)®