Emotional Intelligence and Occupational Stress

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ABSTRACT

The experience of occupational stress has long been implicated in the development of negative outcomes for the individual employee and the employing organisation. General well-being as well as levels of job satisfaction and organisational commitment have been identified in the literature as decreasing as a result of the experience occupational stress. The intertwined relationship between occupational stress and emotion has also been proposed to play a role in the stress–outcomes relationship. Although emotions are an integral and inseparable part of everyday organisational life, they are difficult to measure and as such have generally been ignored in the organisational literature.

Recent research has begun to focus on the role of emotions in the workplace and a development from this approach has been to conceptually examine the relationship between cognition and emotions. This movement has largely been attributed to new research around the construct of Emotional Intelligence (EI). Emotional Intelligence involves behaviours related to the experience of emotion; specifically EI involves expressing, recognising, understanding and managing emotions. Despite the interest in workplace EI, very little empirical research has examined the role EI may play in occupational stress. This thesis systematically examined the relationship between EI and the occupational stress process, including stressors, strains (health), and outcomes of stress (job satisfaction and organisational commitment). The first study of this thesis involved the administration of a questionnaire to 320 employees. The results of Study 1 indicate that four dimensions of EI were particularly important in the occupational stress process: Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control. It was concluded that utilising EI was related to the experience of occupational stress, and to the outcomes of occupational stress (both health and attitudes), such that employees who reported using EI were less likely to report feelings of stress, ill-health and lowered satisfaction and commitment.

The results of Study 1 provided a rationale for the development of an EI training program, a program to teach employees how to utilise the dimensions of EI more effectively in the

workplace and to teach them how to deal with the negative emotions that arise from the experience of occupational stress. The prevalence of occupational stress in the Australian workforce is increasing and as a consequence many stress management intervention programs have surfaced in the literature, although none with emphasis on utilising emotions more effectively. The aim of Study 2 in this thesis was to develop, implement and evaluate an EI training program which had an emphasis on stress management.

Study 2 involved the development of a five-session group training program and a standardised training manual. The training program was evaluated in terms of the variables identified in Study 1 (EI, occupational stress, strains, and outcomes of stress). The sample consisted of 79 teachers (55 with complete data sets). Baseline measures were taken at two time intervals prior to participation in the EI training program. Participants were assessed immediately after participation in the program and at a five-week follow-up interval.

The findings of Study 2 demonstrated the effectiveness of the EI training program in terms of improving levels of EI, decreasing feelings of stress and strain and improving the outcomes of stress. These changes were evident immediately after completion of the training program and were maintained (or improved upon) at the follow-up time period. However there were some limitations to Study 2. Specifically, the short duration of the training program, the short follow-up time interval (of only five weeks) and the use of secondary stress management prevention tools were each limitations of this training program. Further research is necessary to address these limitations and to more accurately determine the efficacy of the training program developed in this thesis.

Despite the limitations of Study 2, the EI training program implemented and evaluated in this thesis illustrated that a training program focussed on the emotional experiences of employees is able to successfully engage employees and assist them in dealing with the experience of occupational stress and the consequences of stress. Furthermore, these results demonstrate that the EI training program was successful in improving the employee's level of EI, providing support for the theory that EI can be learned and developed.

Overall, the development and implementation of an EI training program, in this thesis, demonstrated that behaviours underpinning the dimensions of EI can be learned and that training programs focussed on the emotional experiences of employees in the workplace can be effective in improving employee well-being and in decreasing feelings of occupational stress. The results of this thesis therefore provide support for including EI training programs as part of stress management for employees.

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DECLARATION

I declare that this thesis contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of this thesis. I also declare that to the best of my knowledge this thesis does not contain material previously published or written by another person except where due reference is made in the text of this thesis.

I further declare that the ethical principles and procedures specified in the Swinburne University of Technology Human Research Ethics document on human research and experimentation have been adhered to in the presentation of this thesis.

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CHAPTER 1:
INTRODUCTION

1.1 Preamble to the Current Study

The term Emotional Intelligence (EI) in this thesis refers to the ability to identify, use, understand and manage emotions and emotional information. It has been suggested that there are individual differences in our ability to utilise emotions and emotional information (Mayer & Salovey, 1993) and as such EI has become a popular construct with researchers and practitioners alike. The popularity of EI has stemmed primarily from the suggestion that it underpins various aspects of performance and success that are not accounted for by other psychological constructs (such as intelligence and personality).

One of the rapidly growing areas of interest with regard to EI is its role in the workplace. Traditionally the workplace has been considered to be a cold and rational environment, a place where there is no room for the experience or expression of emotions and in fact researchers fostered the belief that 'emotion is the antithesis of rationality' (Ashforth & Humphrey, 1995; Ashkanasy, Zerbe & Hartel, 2002). However, this view has begun to be challenged, with the recognition that individuals bring their affective states, traits and emotions to the workplace. The question is no longer focussed upon whether emotions have a place in the work environment, but is about trying to determine the impact of using and managing emotions in the workplace and the differences between employees in dealing with emotion and the impact this may have on other variables within the work environment.

Despite the theoretical advances in understanding emotion in the workplace, empirical literature has yet to catch up. The emergence of EI has provided researchers with an means to measure 'effective' utilisation of emotion in the workplace and to relate this to a number of workplace variables. One area that has remained under investigated is the role of EI in the occupational stress process. Occupational stress, in this thesis, is defined as an imbalance between an individuals perceived demands and their perceived ability to deal

with these demands (Cox, 1978; Lazarus & Folkman, 1984). The role of emotion in the stress process is important and, as noted by Lazarus (1999), emotions and stress are interdependent – where there is stress there is also emotion. The construct of EI provides an opportunity for researchers to investigate the relationship between occupational stress and the effective utilisation of emotion in the workplace.

Although researchers have yet to fully understand the relationship between EI and many workplace variables, claims have still been made as to the efficacy of developing EI training programs for employees. It is believed that employees are able to be taught how to utilise emotions and emotional information more effectively in the workplace. Currently programs teaching employees about EI and how to use emotionally intelligent behaviour in the workplace are virtually non-existent, despite the rationale for the development of these programs.

In response to the lack of empirical literature investigating EI and occupational stress, and EI training programs, the goals of this thesis were to firstly explore the relationship between EI and the occupational stress process (including stressors, strains (health) and outcomes of stress), and secondly, based on the conclusions drawn from the first goal, to develop, implement and evaluate an EI training program. Given the relative absence of EI and occupational stress literature and the absence of research into the development of EI training programs, the approach adopted in this thesis was twofold. Firstly, an exploratory study (Study 1) was undertaken to establish the links between EI and the occupational stress process. Secondly, based on the links established in Study 1, an EI training program was developed from EI theory, stress management programs and from other programs deemed to be relevant due to their focus on training and developing emotions (Study 2). This twofold approach thoroughly established the links between EI and occupational stress and provided a strong rationale for the development of the EI training program.

1.2 Chapter Synopsis

Chapter 2 provides a review of the aetiology of stress, with particular emphasis on the emergence of occupational stress. The causes and consequences of occupational stress are examined, in both the theoretical and empirical literature. The role of emotions in the workplace is evaluated, the intertwined relationship between emotions and stress is highlighted, and the lack of empirical literature between emotions and occupational stress is discussed. A rationale is provided for the role of emotion in occupational stress and the need to explore these relationships more thoroughly.

Chapter 3 reviews the development of the construct of EI, from its early conceptualisations to the multiple theories and measures which currently exist. Highlighted in this review is the lack of consensus concerning how to conceptualise and measure EI in organisational research and a decision is made concerning how to assess EI in the current thesis.

Chapter 4 outlines the need for a greater understanding of the causes and consequences of stress due to the growing incidence of occupational stress in the Australian workforce. This chapter highlights recent empirical studies which have attempted to link EI to the stress process. Further, the role of negative affectivity in this process is detailed and it is suggested that automatically partialling out this disposition as a source of bias is not appropriate. Chapter 4, in conjunction with Chapters 2 and 3, provides a strong rationale for the exploratory analysis of these relationships. Finally, this chapter outlines the objectives and hypotheses for Study 1, each of which is related to the dimensions assessed in this study.

The methodology adopted in Study 1 is outlined in Chapter 5. The instruments used in assessing the relationship between EI and occupational stress are detailed and the process of statistical analyses is presented. Chapter 6 contains the results of the statistical analyses that were used to evaluate the relationship between EI and occupational stress. Each of the hypotheses outlined in Chapter 4 are addressed sequentially. Chapter 7 provides a

discussion of the results from Chapter 6, the conclusions that are drawn from these results and directions for future research within this area of research.

Chapter 8 discusses the theoretical underpinning of the development of an EI training program. This chapter outlines previously evaluated training programs that have focussed on learning about, changing and developing emotions and describes important dimensions of EI relevant to the workplace that can be used as outcome measures in evaluating an intervention. Chapter 8 also discusses the twofold use of an EI training program; to develop EI in employees and to use EI as a tool to deal with occupational stress. Finally, this chapter outlines the objectives and hypotheses for Study 2, each of which are to evaluate the effectiveness of the EI training program developed in this thesis.

The methodology for Study 2 is outlined in Chapter 9. This was a two-stage process and is discussed as two separate sections. The first section (method A) outlines the development of the EI training program and the development of the corresponding employee training manual that was utilised throughout the implementation of the training program. The second section (method B) outlines the methodology involved in the implementation and evaluation of the EI training program.

Chapter 10 presents the results of the statistical analyses that were used to evaluate the EI training program. Each of the objectives and hypotheses (outlined in Chapter 8) are addressed sequentially. Finally, Chapter 11 details a discussion of the results presented in Chapter 9, the conclusions drawn from these results and suggestions are made for future research within the area of EI training.

Lastly, Chapter 12 presents a summary of the entire thesis and outlines the conclusions drawn from both Study 1 and Study 2.

CHAPTER 2:
OCCUPATIONAL STRESS

2.1 Introduction

This review examines the origins of occupational stress, as well as the causes and consequences of experiencing stress at work, in order to provide a broad framework for understanding the role of other variables in the stress process. The experience of occupational stress has long been implicated in the development of negative outcomes for the individual employee and the employing organisation. General well-being as well as levels of satisfaction with and commitment to the organisation have each been identified in the literature as decreasing as a result of the employee experiencing occupational stress. The intertwined relationship between occupational stress and emotion has also been purported to play a role in the stress – outcomes relationship. As a consequence many stress management intervention programs have surfaced in the literature, although none with emphasis on utilising emotions more effectively. It is apparent that emotion may play more of a role in the stress process than previously thought and it is reasonable to argue that an intervention focused on effective utilisation of emotions may significantly contribute to the reduction of the negative outcomes due to occupational stress.

2.2 The Experience of Stress

2.2.1 Aetiology of Stress

The term stress is derived from the Latin word *stringere,* which means 'to draw tight', and was used in this way in the 17th century to describe a hardship or an affliction (Cartwright & Cooper, 1997)). Later in the 18th century the term stress referred primarily to an individual's 'force, pressure, strain or strong effort'. It was these early definitions used in physics and engineering that began to influence the notion that stress may affect individuals, where forces are seen to exert pressure on an individual, producing strain (Hinkle, 1977).

The early work of Walter B. Cannon (1932) emphasised that forces in the environment could cause disease and that people would have a tendency to resist these forces. Cannon labelled the stress response as the 'emergency reaction' and is most well known for his work identifying the 'fight-or-flight' response. One of the earliest attempts to scientifically explain the process of stress-related illness was made by Hans Selye (1974, 1976). Selye's work created the three stage model termed the General Adaptation Syndrome (GAS). The first stage in this model is 'alarm resistance' where a phase of lowered resistance is followed by shock and defence mechanisms becoming active, the second stage is 'resistance' where the individual struggles and is exposed to health risk and distress, and finally the last stage 'exhaustion' occurs if resistance is not successful and leads to collapse.

Selye's work was criticised on the basis that it ignored the psychological impact on the individual and also the individual's ability to change the situation after recognising the stress (Cartwright & Cooper, 1997). More comprehensive theories of stress began to emphasise the interaction between the person and the environment. One such model was outlined by Harrison (1978) and was called the person-environment (P-E) fit. In this theory of stress, Harrison emphasised that there are two kinds of fit between an individual and their environment: the extent to which the skills and abilities of the individual match the demands required of them and the extent to which the environment matches the individual's needs. Harrison suggested that when a misfit of either of these two measures of P-E fit arises, health strains will result. Thus, in this model stress is not defined in terms of the environment or the individual, but rather in terms of the degree of misfit between them.

Another contemporary view of stress, aligned with the P-E fit model, emerged in the 1970s. This view saw the stress process as being relational, as a result of a transaction between the individual and the environment, where stress will arise when the demands encountered by an individual are appraised or perceived as exceeding the resources available to them, threatening their well-being (Lazarus, 1966, 1990; Lazarus & Launier, 1978). This transactional theory of stress emphasises identifying processes that link the individual to the environment. In this approach the emphasis is on the 'transaction' – that is, realising

that stress does not rely solely on the individual or the environment but that it is an ongoing process that involves the individual transacting with their environment (Cooper, Dewe & O'Driscoll, 2001). Both the P-E fit model and the transactional stress model share similar elements in that they both focus on the relationship between the individual and the environment as a whole, not as separate parts. Noted by Cooper et al., most models of stress integrate this concept, either implicitly or explicitly.

Often the language used to describe the stress process and stress-related variables is confusing. As noted in Beehr (1998) this is primarily due to inconsistencies from professionals working in this field and the use of stress terms by the greater public. Following the transactional model of stress and the terminology suggested by Beehr, this thesis will adopt the following definitions for the terms stressor, strain and stress:

- *Stressors* are the events or conditions encountered by an individual;
- *Strains* are psychological (health), physical (health) and behavioural responses the individual has to the stressor;
- *Stress* is the overall transactional process, the situation where stressors and strains are present.

2.2.2 The Emergence of Occupational Stress

Models of occupational stress (also termed job stress or work stress) have generally accepted the transactional model of stress proposed by Lazarus (1966), at least from a theoretical perspective, suggesting that stress results from the transaction or the interaction between the individual and the environment. Empirical work has predominantly used this interactional approach to assess occupational stress and its outcomes (Cooper et al., 2001). The interactional approach to occupational stress focuses primarily on the statistical interaction between the stressor and the response, limiting the ability to infer causal pathways in these relationships.

Based on a number of different occupational stress theories and practises Beehr and Franz (1986) identified four approaches to studying occupational stress: medical, clinical/counselling psychology, engineering psychology, and organisational psychology.

For each of these approaches Beehr and Franz indicated what a typical stressor and a typical outcome (or strain) would be. Their medical approach identified the typical stressor as physical and the typical outcome as physical strain (physiological or biochemical). The clinical/counselling psychology approach identified the typical stressor as being psychological and the outcome being psychological strain (for example, anxiety). Thirdly, the engineering psychology approach suggested that the typical stressor was physical (the physical work environment) and the outcome is related to job performance. Finally, the organisational psychology approach suggests that the stressor would be psychological and the outcome would be psychological strain. Beehr and Franz advocate that each of these approaches has been developed largely independently of the others and that their focus is not on the same problems. Historically it is true that these approaches developed independently, however in current research there is little delineation between these approaches, with most studies of occupational stress targeting *both* psychological and physical stressors and several outcomes.

One model of stress already mentioned in Section 2.2.1 is that of the person-environment (P-E) fit. The P-E fit model can be discussed as a subjective model, referring to the fit between the subjective person and the subjective environment (i.e. the individual's *perceptions* of the P-E fit). This subjective model is particularly useful in the occupational stress process where it is the employees' perception of the work environment and their ability to manage that environment which may lead to the experience of occupational stress. The subjective P-E fit model is consistent with other theories of stress which have suggested that stress is subjective in nature, rather than objective (Cox, 1978; Lazarus & Folkman, 1984; McGrath, 1970). From this perspective a model of occupational stress can be proposed to include perceived job demands (the subjective environment) and the individual's perceived abilities to manage those demands (the subjective person), producing strains which are psychological, physical and or behavioural in nature (Harrison, 1978).

Several models of stress relating specifically to occupational stress have been developed in an attempt to better understand the relationship between work characteristics and employee well-being. These models include the Job Demands-Control model (Karasek, 1979;

Karasek & Theorell, 1990), the Effort-Rewards Imbalance model (Siegrist, 1996; Siegrist, Siegrist, & Weber, 1986), the Job-Demands-Resources model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001), and the Burnout model (Maslach & Jackson, 1981; Maslach, Schaufeli & Leiter, 2001).

The Job Demands-Control model of occupational stress (Karasek,1979; Karasek & Thorell, 1990) is based upon the proposition that the interaction between job demand and job control will explain strain outcomes. Karasek defined job demand as the independent variable that measures stressors, such as workload demands. He originally conceptualised job control under the phrase job decision latitude and defined this as the control that the working individual has over tasks and their conduct during their working day. Karasek suggested that when job demands are high and job control is low, strain will occur, leading to both mental and physical health problems. The concept of job control has long been acknowledged as an important factor in the occupational stress process (Cooper et al., 2001), however, questions over how to operationalise this construct and how the interaction between demands and control should be measured have led to inconsistent findings and difficulty in replicating Karasek's proposed model (Fox, Dwyer & Ganster, 1993; Jones & Fletcher, 1996; Schaubroeck & Merritt, 1997).

In comparison, the Effort-Rewards Imbalance model of occupational stress places emphasis on both the effort and the reward structure of work (Marmot, Siegrist, Theorell & Feeney, 1999) and hypothesises that work-related benefits depend on a reciprocal relationship between the efforts and the rewards obtained from work. Effort has been defined as the job demands or the obligations that are placed upon the employee, and rewards are considered to be distributed by the employing organisation and include variables such as salary, job security, and career growth opportunities (Siegrist, 1996). This model of occupational stress hypothesises that an employee's work which is characterised by high effort and low reward represents a deficit between the employee's costs and gains. It is this deficit, or imbalance, that is the cause of stress in the employee which leads to disease and ill-health (for example, cardiovascular disease). Unlike the Job Demands-Control model of occupational stress, the Effort-Rewards Imbalance model examines both situational and personal

characteristics of the work environment, however, the Effort-Rewards Imbalance model is limited in that it includes a narrow approach to health outcomes (originally used to predict the onset of cardiovascular problems) in comparison to the Job Demands-Control model health outcomes (which was developed to predict both individual strain and learning).

A third model of occupational stress is the Job-Demands-Resources model (Bakker, et al., 2003; Demerouti et al., 2001) and is related to the Burnout model (Maslach & Jackson, 1981; Maslach et al., 2001). According to Maslach and Jackson chronic stress is emotionally draining and ultimately leads to a state of 'burnout'. Burnout has been conceptualised as a psychological syndrome developed in response to chronic interpersonal stressors on the job and is characterised by three key dimensions (Maslach et al.). Firstly, burnout is characterised by overwhelming exhaustion, secondly by feelings of cynicism and detachment from the job, and finally by a sense of ineffectiveness and lack of accomplishment. Maslach et al. hypothesise that the exhaustion component represents the stress dimensions of burnout, that the cynicism component represents the interpersonal context of burnout, and that the ineffectiveness and lack of accomplishment components represent the self-evaluation dimension of burnout. Linked to the model of burnout is the Job-Demands-Resources model of occupational stress. This model proposes that the development of burnout follows two processes (Demerouti et al.). Firstly, extreme job demands lead to constant overtaxing of the individual and, in the end, to emotional exhaustion. Secondly, a lack of resources available to the employee complicates the meeting of job demands which then leads to withdrawal behaviours and ultimately to disengagement from work. The Job-Demands-Resources model assumes that although employees in different organisations may be confronted with different working environments, the characteristics of these working environments can always be classified into two categories – job demands and job resources (Bakker et al.). According to the model, job demands are defined as physical, psychological, social or organisational aspects of one's job that require sustained effort (cognitive and emotional) and are associated with psychological and physical costs to the individual. Job resources are defined as the same aspects of one's job (physical, psychological, social or organisational) but those aspects are functional in achieving work goals, reducing job demands, and / or stimulating personal

development and growth. Similar to the models of occupational stress presented above, the Job-Demands-Resources model works on the assumption that stress in the workplace is a result of the interaction between the person and their environment.

Therefore, the model of occupational stress presented in the current thesis will draw primarily from the theory of Lazarus' transactional model of stress (Lazarus, 1966) and from the occupational stress models presented above. Lazarus' theoretical work has influenced the majority of models of occupational stress, in that stress is viewed as an interaction between the person and the environment (Bakker et al., 2003; Demerouti, et al., 2003; Harrison, 1978; Karasek, 1979; Siegrist, 1996). Figure 1 displays the theoretical model drawn from these theories. As shown in Figure 1 there is an interaction or a transaction between the stressors and the strains, both influenced by the subjective perception the individual has as to the fit between themselves and the environment. Figure 1 also shows that there is the influence of the individual's job demands, which helps to create the stressors. Finally if the result of the stressors leads to strain then there are consequences for the individual (termed outcomes) psychologically, physically and behaviourally.

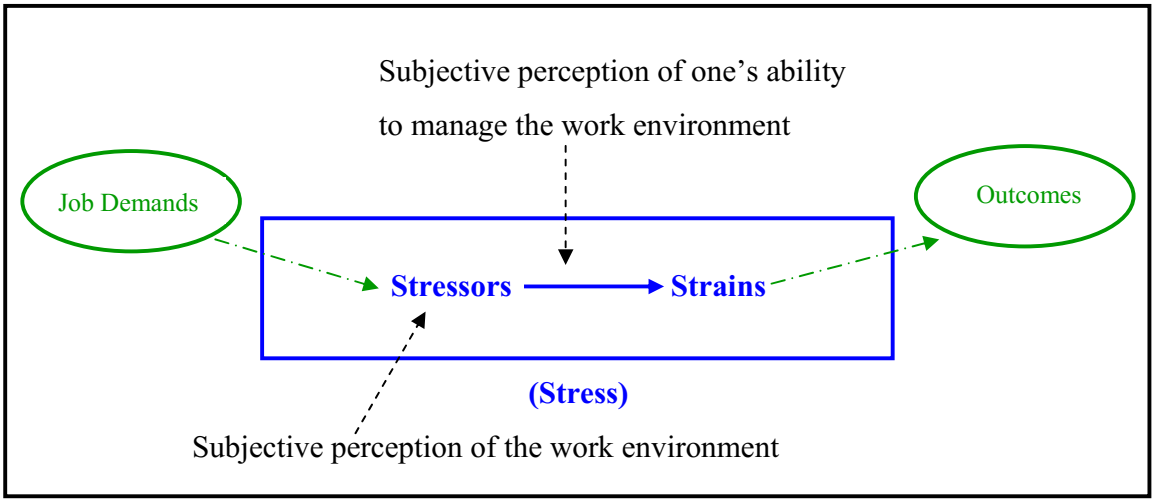

Figure 1 Theoretical model of occupational stress

2.2.3 Antecedents of Occupational Stress

Drawing primarily from the work of Cooper and Marshall (1978), identification of major causes of stress in the workplace can be highlighted. In a study of the literature current at that time, Cooper and Marshall identified over 40 interacting factors which could be identified as sources of work stress. They grouped these into categories and proposed six major causes of stress at work, with this classification system also used in Glowinkowski and Cooper (1986), Cooper and Cartwright (1997) and Cooper et al. (2001). These six major categories are:

1. Factors intrinsic to the job
2. Role in the organisation
3. Relationships at work
4. Career development
5. Organisational structure and climate
6. Organisational interface with outside

The first category identifies causes of stress in the workplace that relate to *factors intrinsic to the job.* Stressors intrinsic to the job itself dominated early research in the area, with the majority of studies examining working conditions and work overload (Cooper & Marshall, 1978). Since this early research, longer lists of factors intrinsic to the job which may cause stress have been identified. As noted in Cartwright and Cooper (1997) poor working conditions, long hours, shift work, travel, risk and danger, new technology, work overload and work underload may all be factors relating to the experience of occupational stress.

Working conditions of a particular job can create stress due to the environment. Evidence presented by Cooper and Marshall (1978) and Cartwright and Cooper (1997) show a link between poor mental health and unpleasant work conditions (including aspects of the physical environment, such as lighting, speed of work required and office design). Work overload has been given substantial empirical attention in the past (Cooper & Marshall) and, as suggested by Glowinkowski and Cooper (1986), overload corresponds to a condition of excess demand. French and Caplan (1973) viewed work overload as being either quantitative (too much to do) or qualitative (too difficult to do). These two authors

summarised the empirical research at the time and hypothesised that quantitative and qualitative work overload produced at least nine different symptoms of strain: job dissatisfaction, job tension, lowered self-esteem, threat, embarrassment, high cholesterol, increases in heart rate, skin resistance, and increased smoking behaviour.

The second category of antecedents of stress in the workplace is that of *role in the organisation*. Roles encompass the demands and behaviours associated with the job an individual performs (Cooper et al. 2001). Role-related strain was first identified by Kahn, Wolfe, Quinn and Snoek (1964) whose research in this area has provided the foundation for most of the empirical work on role strain. Kahn et al. posited two primary ways of role dysfunction: role ambiguity and role conflict. Role ambiguity exists when the individual has inadequate information about their work role, role conflict exists when the individual is 'torn' by conflicting job demands or when the individual is required to do things that they do not want to do and that are not part of their job. Since the work of Kahn and colleagues, two additional roles in the organisation have emerged in the literature as being related to occupational stress: role overload and responsibility (Cooper & Marshall, 1978; Cartwright & Cooper, 1997; Cooper et al. 2001). Role overload (similar to work overload) comprises the number of different roles an individual needs to fulfil and leads to excessive time demands and uncertainty as to the ability to perform these different roles adequately (Cartwright & Cooper). Responsibility is another important potential stressor associated with organisational roles. Responsibility can be differentiated into responsibility for people and responsibility for things (for instance, equipment, budgets, and buildings). As noted by Cartwright and Cooper, too much responsibility exceeding the individual's belief that they are able to manage is a clear source of stress; however, a lack of responsibility may also be a source of stress if the individual's perception is work underload. Responsibility for people has been identified as being particularly stressful, with studies in the 1960s showing an increased incidence of poor physical health when responsibility for people was high (see Cooper & Marshall; Cartwright & Cooper).

The third category of potential causes of stress in the workplace is *relationships at work*. Relationships with others in the workplace (bosses, peers, subordinates) in terms of quality

and social support are suggested to be potential sources of job-related strain (Cartwright & Cooper, 1997). The work of Kahn et al. (1964) and French and Caplan (1970) concluded that a breakdown in relationships with the people one works with can lead to psychological strain in the form of lowered job satisfaction and to feelings of threat to one's well-being. Cartwright and Cooper delineate the relationship an individual has with their boss, subordinates and peers. These authors pose that there is support for the notion that problems with emotional stability often arise when the relationship between the individual and their superior is unhealthy. They further suggest that the manner in which a manager supervises their subordinates is critical, and if the manager considers personal relationships to be trivial or time consuming then the result will often be a serious relationship problem. Finally Cooper and Cartwright hypothesise that stress amongst colleagues can arise from personality conflicts and feelings of competition, often described as the 'office politics'. These authors surmise that effective relationships based on adequate social support are critical to health and well-being in the workplace, and to the success of the organisation as a whole.

The fourth category identifies antecedents of occupational stress, and is termed *career development*. Cooper and Marshall (1978) identified two clusters of potential stressors in the area of career development: lack of job security (a fear of job loss, obsolescence or retirement) and status incongruity (reaching career ceiling, under- or over-promotion). For many employees career progression is valued, with promotion generally leading to an increase in income, job status and new challenges. Often when an employee reaches middle age they find their career progress has slowed or stopped with job opportunities becoming fewer, knowledge becoming obsolete and energy waning (Cartwright & Cooper, 1997). Empirical evidence reviewed by Cooper and Marshall suggest that when status incongruity is present, lowered rates of psychological and physical health are high. This is further supported by Cooper et al. (2001) who suggest that strain is often caused by a lack of advancement in the organisation, however, it may also be present when employees feel promoted beyond their capabilities. These authors hypothesise that under- and over-promotion can have serious detrimental effects on the well-being of the employee and on levels of job satisfaction.

The fifth major category of potential causes of occupational stress is *organisational structure and climate*. Simply being in an organisation can threaten an individual's freedom, autonomy and identity. An increasing number of researchers are investigating this area and problems include: lack of participation in decision-making processes; lack of a sense of belonging; lack of effective consultation; poor communication; restrictions on behaviour; and office politics (Cooper & Marshall, 1978). In summing the literature of the 1970s, Cooper and Marshall stated that employee participation in the organisation is related to lowered turnover and increased productivity, however, when participation is absent, lowered levels of job satisfaction and higher levels of poor health (mental and physical) result, a supposition supported in later empirical research (see Cooper et al., 2001).

The final source of occupational stress outlined by Cooper and Marshall (1978) was labelled *organisational interface with outside.* This category includes the interface between life outside and life inside the organisation and may consist of family problems, life crises, financial difficulties, conflict of beliefs and conflict with family demands. The area that has received the most research interest is that of the work-family interface (sometimes referred to as work-family conflict). Emphasised by Cooper et al. (2001) changes in the structure of families, the increase of women in the workforce, and changes in technology (for example, portable computers and the internet) which enable the employee to perform work-related tasks in a variety of locations have blurred the boundary between life on and life off the job. This conflict between roles has been consistently linked with psychological strain (Frone, Russell & Cooper, 1992).

2.2.3.1 Summary

Most of the literature regarding occupational stress aligns with the six major sources of stress presented by Cooper and Marshall (1978), with researchers investigating them independently or in conjunction with one another. This list of stressors is not exhaustive but highlights the most commonly reported and most intensely experienced stressors. Cooper et al. (2001) acknowledged that two issues need to be recognised when conducting research on stressors. Firstly, stressors, such as the ones highlighted here, do not occur in isolation

from one another but often will occur in combination. For example, an employee may experience role ambiguity leading them to feel a sense of job insecurity, resulting in increased time devoted to working at home, leading to increases in work-family conflict. It is therefore better practise to evaluate the impact of these stressors as a whole rather than as separate entities. Secondly, the debate as to whether stressors should be investigated 'subjectively' or 'objectively' continues in the literature. Cooper et al. emphasise that the transactional model of stress focuses on the notion that it is the perception of an event as threatening that is critical for the experience of strain. The majority of empirical research on occupational stress tends to use self reports of stressors, aligning with the transactional model of stress, and assuming that subjective perception is of primary importance in understanding the relationship between stressors and strain. In the current thesis stress will be evaluated using subjective perception (i.e. using a self-report questionnaire), aligning with previous work suggesting that an individuals perception of stress is of primary importance in evaluating their level stress. Secondly, a number of the stressors mentioned throughout this section (for example, work overload, relationships with others, physical environment) will be evaluated in this thesis in order to maintain consistency with current literature.

2.2.4 Consequences of Occupational Stress

Consensus emerges in much of the literature as to what the major consequences (or outcomes / strains) of occupational stress are. Most researchers agree that strains can be classified into three major types: psychological, physical, and behavioural. A brief explanation of each of these classifications will be provided here, however analysis of current empirical literature supporting these outcomes following exposure to stressors will be presented in Section 2.3 of this thesis.

The first major type of strain resulting from stressors is that of psychological strain (also referred to as psychological health). Harrison (1978) posed that strain referred to the deviation from normal responses and that psychological strain included responses such as job dissatisfaction, depression, lowered self-esteem and unsolved problems. Similarly, in their review of occupational stress, Downs, Driskill and Wuthnow (1990) note that the

experience of stress has been related to the psychological areas of depression, fatigue, low self-esteem, anger, apathy, irritability, guilt, moodiness, boredom, accidents, withdrawal and burnout. Edwards, Caplan and Harrison (1998) also suggested that psychological strain included dissatisfaction, anxiety, dysphoria, complaints of insomnia and restlessness. Each of these resulting psychological strains is further supported in the literature (Beehr, 1998; Quick, Horn & Quick, 1986; Spector, 1998).

The second major strain resulting from exposure to stressors is that of physical strain (also referred to as physical health). Physical or physiological strain is hypothesised to manifest in symptoms such as high blood pressure, changes in blood eosinophils, and elevated serum cholesterol (Harrison, 1978). Downs et al. (1990) outlined in their review that stress has been physically related to cardiovascular disease, hypertension, ulcers, asthma, and migraine headaches. Edwards and colleagues (1998) note that physiological strains also included elevated blood pressure and compromised immune system functioning. In general, researchers tend to agree what the major physical strains caused by stress are (see Quick et al., 1986).

Finally, the third classification of strain is that of behavioural strain. Quick et al. (1986) suggest that behavioural changes are among the earliest and most easily recognised signs of increases in stress. Research has associated increased cigarette smoking, increased alcohol and recreational drug abuse, violence, stuttering, overeating, and frequent utilisation of health care services as symptoms of behavioural strain (Harrison, 1978; Quick et al., 1986; Edwards et al., 1998). An important point in this domain is emphasised by Beehr (1998). He notes that not all behavioural responses to stressors should be categorised as strain responses, and that only those responses that are directly harmful to the individual are strain responses. For instance, changes in job performance may be directly helpful (or harmful) to the organisation, but by themselves, may not necessarily be harmful to the individual.

2.2.4.1 Summary

Three major classifications of consequences to occupational stress have been identified and generally agreed upon in the literature – psychological, physical and behavioural. Difficulty in measuring these outcomes arises when there are situations where the stressor may produce an outcome that is not necessarily harmful to the individual, particularly in the classification of behavioural strains. Less ambiguous is the assessment and interpretation of psychological and physical strains (often referred to as ill-health or well-being). Both psychological and physical strains have been well studied in the literature and generally if the outcome of exposure to a stressor leads to either of these classifications of strain it is considered to be harmful to the individual. Aligning with this literature, the current thesis aims to assess a number of the consequences of occupational stress, particularly psychological and physical strains.

2.3 Recent Research linking Occupational Stressors with Strains

A study by Cooper, Clarke and Rowbottom (1999) investigated the relationship between occupational stress, job satisfaction and well-being in a sample of anaesthetists. The authors tested the relationship between personal and environmental factors and responses to work. They also investigated the role of job satisfaction as a buffer against psychological ill-health (psychological strain). Cooper and colleagues reported that 35.1% of the variance in job satisfaction was explained by personality and occupational stress, and that 37.1% and 29.8% of the variance in mental and physical health (respectively) was explained by personality and occupational stress. These authors also tested the relationship between job satisfaction and mental health and reported that there was a strong negative correlation between the two variables ($r = -.43$, $p<.001$) suggesting that when employees have a high level of job satisfaction, feelings of poor health should be low. Cooper et al. also reported the same correlation of $r = .43$ ($p<.001$) between occupational stress and mental health, suggesting that higher levels of occupational stress are related to poorer mental health. Further analyses of these relationships revealed that correlations between occupational stress and mental health are stronger when job satisfaction is low, compared to when satisfaction is high. The authors suggest that this indicates that there is evidence of a

buffering effect from job satisfaction, with employees who experience higher levels of job satisfaction being buffered against the negative health effects of stress.

Similar findings were reported in a recent study by Johnson et al. (2005). In this paper the authors examined occupational stress across a number of different occupations and the relationship between job satisfaction and health. Johnson and colleagues reported a correlation of $r = .63$ ($p<.01$) between job satisfaction and psychological well-being, and a correlation of $r = .75$ ($p<.001$) between job satisfaction and physical health, where higher scores of job satisfaction equate to lower job satisfaction. These authors identified six occupations (out of 26 included in the study) as being the most stressful regarding poor health and lowered job satisfaction. These occupations were: ambulance, teachers, social services, customer service call centres, prison officers and police. Johnson et al.'s findings of particular occupations being more stressful, in terms of negative outcomes, supports earlier work on the ambulance service (Young & Cooper, 1999), teachers (Travers & Cooper, 1993), healthcare (Cooper et al., 1999), and social workers and nurses (Kahn, 1993). These findings are important as they highlight specific occupations which are 'at risk' of experiencing stress and suffering the negative consequences of stress, and therefore identify appropriate target populations for research on stress and stress management.

A third study examining the relationship between stress, health and job satisfaction was conducted by Heslop and colleagues (2002). In this paper the authors revisited the association between self-perceived stress, job satisfaction, and cardiovascular disease and mortality. They hypothesised that a lack of job satisfaction would be associated with stress, an adverse profile of cardiovascular risk factors, and cardiovascular mortality; although there exists in the literature a degree of uncertainty as to the relationship between job satisfaction and cardiovascular disease (Kasl, 1996). The results of their analyses suggested that there was an association between self-perceived stress and job satisfaction but little evidence that a lack of job satisfaction was associated with risk of cardiovascular disease, or indeed cardiovascular mortality. A limitation of this study was that Heslop et al. considered job satisfaction to be a particular form of occupational stress. The problem with this conceptualisation is that it departs from the traditional models of occupational stress

whereby attitudinal responses to work (such as job satisfaction) tend to be classified as outcomes of stress, rather than a form of stress itself (see Cooper et al., 1999; Cooper et al. 2001). Indeed, this could account for why researchers have consistently found a relationship between stress and cardiovascular risk factors (see Heslop et al.) but are unable to establish clear links between job satisfaction and these risk factors.

A comprehensive study by Leong, Furnham and Cooper (1996) also examined the occupational stress-outcome relationship, but this time included organisational commitment as a variable. The authors assessed whether organisational commitment had main or interactive effects in predicting stress-related outcomes. Leong et al. reported significant correlations between organisational commitment and measures of mental ill-health (r = -.27), physical ill-health (r = -.25), job satisfaction (r = .59). They also report a significant relationship between occupational stress and mental ill-health (r = .23) and physical ill-health (*r* = .34). Utilising hierarchical regression analysis Leong and colleagues failed to show any substantial moderating effect of organisational commitment on the occupational stress-outcome relationship, suggesting instead that the role of organisational commitment is a direct one, rather than a buffering one.

Burke (2002) investigated the relationship between occupational stress and health in a sample of over 2,500 women. He also included measures of job satisfaction, psychosomatic symptoms, days of illness and a measure of work-family conflict. Burke reported that women with more work stressors had higher levels of psychosomatic symptoms (stomach-aches, back problems, headaches) and more days of illness during the past year, and that woman reporting greater work-family conflict (whether family interfered with work and vice versa) also indicated higher levels of psychosomatic symptoms. In addition he reported that women who recorded more work stressors indicated that they were less satisfied with their job than women who recorded less work stressors. The findings of the large-scale study by Burke are supportive of previous literature in regards to stress and health (see the abovementioned studies) and further extend this literature by examining the role of work-family conflict in the stress process. Although being limited by the use of females only,

these results are important in understanding the extent to which stress at work can negatively impact on the family life.

Continuing with a similar line of research was Bruck, Allen and Spector (2002). These authors examined the relationship between work-family conflict and job satisfaction in 160 employees (the majority of which were female) who were living with a partner or had at least one child living at home, and who worked a minimum of 20 hours per week. Bruck et al. claimed that the operational variability in previous studies of work-family conflict and job satisfaction had hindered the understanding of the relationship between these variables. Therefore these authors employed a measure of work-family and family-work conflict to assess overall conflict, and measures of time-based, strain-based and behaviour-based conflict. Bruck et al. report that work-family conflict was significantly related to global job satisfaction ($r = -.28$, $p<.01$) suggesting that as the interference between the workplace and the home life increases, feelings of job satisfaction decrease. Bruck et al. also note that overall family-work conflict was related to global job satisfaction ($r = .24$, $p<.01$) suggesting that as the home life interferes with the work life, job satisfaction also decreases. Although one of the aims of this paper was to operationalise the constructs under investigation more thoroughly (by including a three-fold measure of conflict as well as overall conflict) the results presented by Bruck et al. did not necessarily support the need for this fine delineation. Global job satisfaction was unrelated to time-based conflict and to strain-based family-work conflict. It was however moderately related to strain-based work-family conflict and to both measures of behaviour-based conflict. These findings suggest that whilst the three-fold delineation of conflict provides some interesting findings, it is just as appropriate to use overall measures of conflict (work-family and family-work) to achieve similar results.

A recent study by Mikkelsen and Burke (2004) investigated overall work-family conflict and health in a group of Norwegian police officers. Using regression analysis, Mikkelsen and Burke report that work-family conflict was associated with indicators of poor psychological health, but not poor physical health. They note that their findings are

consistent with previous research showing that work-family conflict is associated with increased psychological distress.

2.3.1 Summary

Highlighted in this section are some of the more recent empirical studies examining the occupational stress-outcome relationship and relationships between variables purported to play a role in the occupational stress process (either as stressors or as strains). Cooper, et al. (1999) reported a relationship between occupational stress and well-being such that higher levels of occupational stress were related to lower levels of well-being. This result was also reported by Leong et al. (1996) and by Burke (2002). Numerous studies reported a relationship between job satisfaction and health whereby higher levels of job satisfaction were related to decreases in poor health (Burke, 2002; Cooper et al., 1999; Heslop et al., 2002; Johnson et al., 2005). The paper by Cooper et al. also suggested that job satisfaction acted as a buffer against the negative health effects of stress. Leong et al. included a measure of organisational commitment in their work and reported that employees who were more committed to the organisation also had higher levels of health and well-being, however they did not find evidence to suggest that organisational commitment was a buffer against the negative effects of stress, but rather that it had a direct effect only.

Several researchers have investigated the role of conflict between the workplace and the family as a possible outcome of occupational stress. Burke (2002) reported that increased interference of the workplace to the family life led to more psychosomatic health symptoms, a finding further supported by Mikkelsen and Burke in 2004. Bruck et al. (2002) highlighted that increased conflict between the work and family life (in both directions) led to lower levels of job satisfaction in employees.

Overall recent empirical literature provides support for the role of certain variables in the stressors-outcomes relationship. Of particular importance are the psychological, physical and behavioural variables of health, job satisfaction, organisational commitment and work-family conflict and it is an aim of this thesis to empirically examine these variables in the occupational stress process.

2.4 The Role of Emotions in the Workplace

Emotions are an integral and inseparable part of everyday organisational life. The experience of work is saturated with emotions, from moments of fear, joy, frustration or grief to an enduring sense of commitment or dissatisfaction (Ashforth & Humphrey, 1995). A review on emotions in the workplace (Ashforth & Humphrey) emphasised how past research fostered the belief that 'emotion is the antithesis of rationality'. Ashforth and Humphrey argue that this belief is too simplistic and that the experience of work is saturated with emotion.

Recent empirical work examining the relationship between emotions and aspects of work and strain has referred to the work of Hochschild (1983) who introduced the concept of emotional labour (Abraham, 1998; Morris & Feldman, 1997). Emotional labour refers to the quality of interactions between employees and any person they interact with (termed the 'client'). During interactions with 'clients' the role of many employees is to express appropriate emotions, as their job requires. For instance, in her seminal book published in 1983, Hochschild investigated the work of flight attendants. She demonstrated that their job could not be fully described by the physical aspects of their work, sensorimotor and cognitive demands, but that a substantial part of their job was dealing with passengers and their emotions. Apart from having to work on tasks given to them, extending physical and or mental effort, employees are also required to manage their emotions as part of their job (Zapf, 2002). Based primarily on the work of Hochschild, Zapf suggests that emotion work (emotion labour) possesses three characteristics: it occurs in interactions with the client; emotions are displayed to influence others' emotions, attitudes and behaviours; and any emotional display has to follow certain rules (appropriate to the job requirements).

A theoretical paper by Briner (1999) outlines reasons why the role of emotions in the workplace has generally been ignored in research. Firstly Briner highlights that the workplace has traditionally been viewed as a rational, logical and a non-emotional environment with its main purpose being the completion of specific tasks, such that emotions have been considered irrelevant or even unnecessary to effective workplace

performance. Emotions are transient and therefore difficult to assess in self-report techniques such that many researchers and practitioners tend to avoid this area of study and instead focus on more easily measurable constructs such as attitude or satisfaction. Briner attributes the recent resurgence in interest in emotions in the workplace to the notions that psychology as a whole has begun to pay more attention to affect, and that due to an increase in the number of employees working in service industries the demand for emotional expression in the context of customer service has risen, and finally, because of the popularisation of the construct of EI.

Since the work of Hochschild (1983) and Ashforth and Humphrey (1995), researchers have begun to integrate two areas of workplace research (job satisfaction and occupational stress) with emotion research. Although this research is limited, a number of papers have been published relating emotions to job satisfaction and occupational stress. Each of these areas is examined below.

2.4.1 Emotions and Job Satisfaction

The degree to which an employee likes or dislikes an aspect of their job involves their feelings, and feelings are at the core of emotions (Muchinsky, 2000). Cranny, Smith and Stone (1992) estimated that there had been over 5000 published papers up to that time examining job satisfaction in some way. A study by Fisher (2000) examined what previous studies of job satisfaction had failed to include – the role of emotion while working. Fisher described job satisfaction as an attitude with an affective component (emotions, feelings) and a cognitive component (judgement, belief). Fisher hypothesised that emotions should be directly attributable to the job because emotions have a target and are often triggered by actual events in the workplace (being angry *at* someone, feeling frustrated *because* of an obstacle in reaching a goal, being proud of *an* accomplishment). Internal features of a job such as the relationship the employee has with supervisors and colleagues is likely to be related to emotion and therefore influence an employee's perception of job satisfaction, more so than external features such as pay and promotion (Fisher).

In analysing data from 121 employees, Fisher (2000) reports that the experience of emotions is related to job satisfaction, with the experience of positive emotions being related to increased job satisfaction, and negative emotions being related to decreased job satisfaction, whereby employees who report experiencing positive emotions in the workplace also report greater feelings of satisfaction with their job than employees who report experiencing negative emotions in the workplace. Little support was found for the hypothesis that only internal features of the job relate to emotion and job satisfaction, and not external features. In this paper both internal and external features of job satisfaction were related to emotions, although the relationships were quite small. In concluding, Fisher suggests that organisational efforts to improve emotions in the workplace may pay off in better attitudes from employees. This study is encouraging as it was the first to explore the relationship between emotions experienced at work and job satisfaction, with the results highlighting the potential consequences of experiencing positive and negative emotions at work.

2.4.2 Emotions and Occupational Stress

In 1999 Lazarus suggested that stress and emotions are interdependent – where there is stress there is also emotion. Historically, researchers tended not to know or cite emotion research (Lazarus), however, today the practical importance of emotion in stress and psychological and physical well-being are widely recognised (Spector & Goh, 2001).

In a chapter investigating the role of emotions specific to the occupational stress process, Spector and Goh (2001) outlined their emotion-centred occupational stress model and suggested how a focus on emotions can enhance employee well-being. Organisational culture has been suggested to play a role in the experience and expression of emotions at work (Ashforth & Humphrey, 1995, Zapf, 2001) and, with regards to occupational stress, the display and feeling rules of an organisation may impact on the psychological and physical health of its employees (Spector & Goh). Spector and Goh's emotion-centred model of occupational stress is consistent with Lazarus' (1966) transactional model of stress. Their model proposes that first an employee is exposed to an event in their environment which they may or may not perceive as stressful. If the event is perceived as

stressful then negative emotions will arise, leading to one or more of the three forms of strain (psychological, physical and behavioural). These authors note that the continual experience of negative emotions in the workplace is likely to induce job dissatisfaction, a decline in organisational commitment, and increased withdrawal. The model proposed by Spector and Goh is important as it is one of the first models of occupational stress to include the experience of emotion. If, as Lazarus suggests, emotion and stress are interdependent constructs, then the empirical examination of models of occupational stress should always include the effect of emotion in the process.

2.4.2 Summary

The growing consensus from scientists and scholars in the fields of stress and emotion research is that they cannot exist without one another. The concept of emotion in the workplace emerged primarily due to the work of Hochschild (1983) and her theory of emotional labour. Because emotions are difficult to measure in the workplace, they have generally been ignored in organisational research. Two areas in which attempts have been made to investigate the role of emotions are job satisfaction and occupational stress. In both of these areas the research suggests that being able to manage negative emotions effectively could influence job satisfaction and the outcomes of occupational stress, and in fact, Spector (1998) advocated that emotions would, at least in part, mediate the effect of occupational stressors on physical and behavioural strain, as well as longer term psychological strain.

Briner (1999) warned that emotions in the workplace should not be assessed without reference to behaviour and cognition, and that the role of emotion should be integrated with existing research and practise. He further suggested that the construct of EI could provide opportunities for researchers to more thoroughly examine the role of emotions in the workplace. The idea that we can be intelligent in the way we deal with our emotions in the workplace is a new area of research, and as noted by Muchinsky (2000), "emotional intelligence may be the long-sought missing link…which unites that classic 'can do' ability determinants of job performance with the 'will do' dispositional determinants" (p.804). The current thesis aims to systematically investigate the extent to which being able to

effectively deal with emotions arising in the workplace relates to the experience and outcomes of the occupational stress process.

2.5 Conclusion

This review has attempted to outline the complete process of occupational stress. Using the P-E fit model and the transactional model of stress, the antecedents and consequences of occupational stress have been examined. From this, recent research linking causes of stress with the outcomes of stress has been highlighted. A noticeable gap in the occupational stress literature emerged as the role of emotions in this process was evaluated, particularly as this research has tended to focus on what emotions are being experienced and not the way in which the emotions are being dealt with. Numerous theorists have advocated that stress and emotion are intertwined constructs and do not occur independently of one another. If the way an employee manages emotion at work is not examined in the occupational stress process, it is reasonable to assume that the accuracy and inferences of evaluating the occupational stress process are significantly reduced.

The next chapter of this thesis will present a review of the EI construct. This psychological construct is purported to assess the extent to which an individual is able to deal with emotions effectively, and provides 'measurable' ways of examining the influence and consequences of emotional experiences at work. Following the review presented in Chapter 3, the first of the two empirical studies presented in this thesis will be evaluated. Study 1 aims to empirically test the relationships between EI and the occupational stress process (including stressors, strains and outcomes). The second empirical study will then be presented which will draw from the outcomes of Study 1 and aims to develop, implement and evaluate an EI training program with an emphasis on stress management.

CHAPTER 3:
EMOTIONAL INTELLIGENCE

3.1 Introduction

The previous chapter provided a systematic review of the occupational stress process, highlighting the lack of literature linking emotions into the process. It is the aim of this thesis to understand the consequences of being able to effectively deal with emotion at work in the occupational stress process. One such way to do this, as identified in Chapter 2, is to utilise a fairly new construct in psychology: EI. Therefore, the review in the chapter aims to examine the origins of EI, as well as its development from conceptualisation into reliable psychometric tests. Three major conceptualisations of EI are explored (the ability model, the competency model and the non-cognitive model) along with the measures developed from them. The lack of workplace specific measures of EI is discussed and a recent model addressing this issue is presented. This review highlights that the overriding focus of theoretical research on EI has hypothesised that differences in EI have the potential to affect individual outcomes.

3.2 The Emergence of Emotional Intelligence

Determinants of occupational stress, effective leaders, job satisfaction, organisational commitment, poor health and workplace performance have been key areas for organisational psychology research over the past decade. More recent research has focussed on the role of emotions in the workplace and a development from this approach has been to conceptually examine the relationship between cognition and emotions in the workplace (Askanasy, Hartel & Zerbe, 2000). This movement has largely been attributed to new research around the construct of EI and it has been argued that EI may predict key determinants of workplace performance more so than traditionally used constructs such as general intelligence and personality (Mayer, 2001; Watkin, 2000). In the workplace it is believed that performance relies more than ever on interpersonal relationships, tolerance,

adaptability and teamwork, and it has been proposed that EI constitutes the building blocks to these important interpersonal workplace behaviours (Goleman, 1998). The popularity of EI has stemmed primarily from the expectation that it underpins various aspects of performance and workplace success that are not accounted for by other psychological constructs (such as intelligence and personality). Generally, EI can be seen to underlie the broad notion of interpersonal effectiveness in the workplace, and may therefore be a useful contributor to our understanding of such variables as effective networking, communication, negotiation, performance, leading and motivating (Goleman, 1998).

An interpretation of the term EI that encompasses the various operationalisations of the construct describes it as the ability to deal effectively with emotions both within oneself and others. Whilst definitive boundaries of EI have not yet been reached they typically extend to include the perception of emotions, reasoning and utilisation of emotions and the regulation and management of emotions (Dulewicz & Higgs, 2000; Mayer & Salovey, 1995, 1997; Salovey & Mayer, 1990).

Capitalising on the recent popularity of EI, a number of models and measures have been developed, providing the area with alternative ways to conceptualise and measure this construct. The expanding diversity of models of EI encompasses a range of psychological variables from traditional personality traits to mental abilities. The emergence of different models and measures of EI has resulted in practitioners and researchers debating about the construct of EI and how best to measure it.

3.3 Conceptualisations of Emotional Intelligence

Mayer, Caruso and Salovey (1999) outlined three criteria in conceptualising an EI model, which has been adapted in this thesis to create a set of criteria for EI in the workplace. Firstly the conceptualisation must reflect an ability to perform in the workplace, rather than refecting preferred ways of behaving; secondly, the conceptualisation should encompass a set of related abilities that are distinct from already established psychological constructs (such as personality or general intelligence); and thirdly, the conceptualisation should be

developmental, that is, it not only develops with age but is able to be enhanced and further developed within the individual through professional training programs. The creation of a criterion for assessing workplace EI has the potential to assist researchers and practitioners alike in programs of selection, assessment, training and development of employees at every level within an organisation.

This chapter will now present three well developed and popular conceptualisations of EI. Each of these conceptions (models) draws in some way from the criteria suggested by Mayer et al. (1999) outlined above.

3.3.1 Emotional Intelligence Model 1

Emotional intelligence as originally conceptualised by Salovey and Mayer (1990, p.10) "involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth". Mayer and Salovey (1993) suggested that there are individual differences in EI relating to differences in our ability to appraise our own emotions and those of others. They further suggested that individuals higher in EI might be more open to internal experience and better able to label and communicate those experiences.

Salovey and Mayer (1990) initially posed that the mental processes involving emotional information included the appraisal and expression of emotion, regulation of emotion and adaptive use of emotions. However, this framework also included personality traits; for instance, EI was hypothesised to be able to distinguish between individuals who were 'genuine and warm' compared to those who were 'oblivious and boorish'. Because the concept of EI would be more useful if it was separated from personality traits and confined to a mental ability, the model was revised in 1997 (Mayer & Salovey, 1997) to give greater emphasis to the cognitive components of EI and to highlight the potential for emotional and intellectual growth. The revised EI model is ordered hierarchically from basic

psychological processes to more psychologically integrated processes and includes four branches. This model is presented in Table 1 below.

Table 1: Mayer and Salovey's (1997) model of Emotional Intelligence

Emotional Intelligence Dimension	Emotional Abilities
1. Perception, appraisal and expression of emotion	The accuracy with which individuals can identify emotions and emotional content
2. Emotional facilitation of thinking	Describes emotional events that assist intellectual processing
3. Understanding and analysing emotions and employing emotional knowledge	The ability to recognise, label and interpret emotions
4. Reflective regulation of emotions to promote emotional and intellectual growth	Conscious, reflective regulation of emotions to enhance growth

Each of the stages in the model (presented in Table 1) includes levels of abilities which it is hypothesised that an individual completes in sequence before progression to the next stage or branch. Those who have higher levels of EI are believed to progress through these abilities quicker than those with lower levels of EI.

3.3.2 Emotional Intelligence Model 2

Goleman (1995a; 1998) popularised the concept of EI with the publication of two books. In his first book, Goleman describes EI to include "self-control, zeal and persistence and the ability to motivate oneself" (1995a, p.xii); and as being able to "control impulse and delay gratification," to "keep distress from swamping the ability to think; to empathize and to hope" (1995a, p.34). He later defined EI in his second book as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and our relationships" (1998, p.317).

Goleman (1998) has expanded Mayer and Salovey's (1997) definition of EI by incorporating what he terms personal and social competencies. His model consists of five dimensions of EI and twenty-five emotional competencies and is presented in detail in

Table 2 below. Interestingly, Goleman's conceptualisation of EI closely parallels the earlier ideas of social intelligence (Thorndike, 1920) and personal intelligence (Gardner, 1993), however, it departs significantly from Salovey and Mayer's ability model (see Table 1 and Table 2).

Table 2: Goleman's (1998) model of Emotional Intelligence

Emotional Intelligence Dimension	Emotional Competencies
Personal competencies:	
1. Self-awareness	Emotional awareness, accurate self-assessment and self-confidence
2. Self-regulation	Self-control, trustworthiness, conscientiousness, adaptability and innovation
3. Motivation	Achievement drive, commitment, initiative and optimism
Social competencies:	
4. Empathy	Understanding others, developing others, service orientation, leveraging diversity and political awareness
5. Social skills	Influence, communication, conflict management, leadership, change catalyst, building bonds, collaboration and cooperation and team capabilities

Recently Goleman (2001) further developed his EI model. Statistical analysis collapsed the original twenty-five competencies into twenty, and the five domains into four. This revised model of EI is presented in detail in Table 3.

Table 3: Goleman's (2001) model of Emotional Intelligence

Emotional Intelligence Dimension	Emotional Competencies
Personal competencies:	
1. Self-awareness	Emotional awareness, accurate self-assessment and self-confidence
2. Self-management	Self-control, trustworthiness, conscientiousness, adaptability, achievement drive and initiative
Social competencies:	
3. Social awareness	Empathy, service orientation and organisational awareness
4. Relationship management	Developing others, influence, communication, conflict management, leadership, change catalyst, building bonds and teamwork and collaboration

Table 2 and Table 3 outline the development of Goleman's (1998, 2001) model of EI. His original model (presented in Table 2) incorporated a large number of competencies, all which Goleman believed belonged to the construct EI. Further work with his model (outlined in Goleman 2001) collapsed the model into a more concise framework (presented in Table 3). However, because of the large scope of attributes covered in Goleman's framework of EI, researchers have questioned which adaptive attributes Goleman wouldn't consider part of EI (Mayer, Salovey & Caruso, 2000a). Goleman's definition of EI, unlike the ability model presented in Table 1, incorporates a combination of personality traits, abilities and emotional traits (for example, as shown in Table 3 his model includes attributes such as conscientiousness, trustworthiness and leadership).

Despite the limitations of Goleman's (1998, 2001) models of EI, in his books he theoretically outlines linkages between EI and workplace variables which have not been previously explored in any detail. He hypothesised that EI accounts for which individuals would excel at any given job, who would be an outstanding leader, and that an emotionally intelligent organisation is better equipped to survive than one which is not. Although

Goleman himself does not empirically test these claims, they exist as an important basis for future directions of research on EI. Goleman hypothesises that the dimension of self-awareness (refer to Table 3) is essential in being able to recognise one's own strengths and weaknesses and that accurate self-assessment leads to superior performance in the workplace. Interestingly Goleman believes that each of the twenty emotional competencies in his revised model, presented in Table 3, are job skills that can be learned, a hypothesis yet to be empirically confirmed.

3.3.3 Emotional Intelligence Model 3

A third model of EI has been proposed by Bar-On (1997), who defines EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p.14). Bar-On's (Bar-On, Brown, Kircaldy & Thome, 2000; Bar-On, 1997) model of EI is presented in detail in Table 4.

As outlined in Table 4 below, Bar-On's (1997) model of EI incorporates five EI dimensions, which is similar in size to the model presented by Mayer and Salovey (1997), however differs markedly in content to their model outlined in this chapter (refer to Table 1). Bar-On's model is more aligned with Goleman's (2001) model of EI than with the Mayer and Salovey model, with both of these models suggesting that EI includes self-awareness, maintaining relationships with others and self-control (see Table 3 and Table 4).

Table 4: Bar-On's (1997) model of Emotional Intelligence

Emotional Intelligence Dimension	Emotional Competencies
1. Intrapersonal skills	Being aware of and understanding oneself and one's emotions, expressing one's feelings and ideas
2. Interpersonal skills	Being aware of, understanding and appreciating other's feelings, establishing and maintaining satisfying relationships with others
3. Adaptability	Verifying feelings with external cues, sizing up immediate situations, being flexible in altering feelings and thoughts with changing situations and problem solving
4. Stress management	Coping with stress and controlling impulses
5. General mood	Being optimistic and being able to feel and express positive emotions

A difficulty with the competencies of the Bar-On (1997) model of EI is that they theoretically map onto measures of personality. For instance, The California Psychological Inventory (CPI) includes dimensions of self-assurance, interpersonal effectiveness, self-acceptance, self-control, flexibility, and empathy (Cohen, Swerdlik & Smith, 1992). Components in Bar-On's EI framework include self-regard, assertiveness, interpersonal effectiveness, social responsibility, impulse control, flexibility, and empathy (Bar-On, 2000; Mayer et al., 1999; Mayer et al., 2000a). Despite the obvious overlap between these constructs Bar-On has stressed that his EI model was not developed to measure particular personality traits. Although this may have been his intention it seems unlikely that the EI model proposed by Bar-On (which is similar to the model proposed by Goleman (2001)), is specific to the construct of EI alone, but more likely that this model also represents other variables commonly used in psychological research such as personality. Overall it has been suggested that the construct of EI may only be useful if it is theoretically and empirically divorced from personality processes and confined to a mental ability assessing the inter-relatedness of cognitions and emotions (Mayer & Salovey, 1997).

3.3.4 Summary

Collectively the three models of EI presented in this section share several broad themes. Firstly, they involve a conceptually related set of variables to do with emotions that contribute to or account for individual differences in adaptive behaviour. Secondly, it is proposed that the components of EI whether they be abilities (cognitive or otherwise), competencies or traits, can be learned or enhanced through effective training and development programs. Bar-On's (1997) model of EI and Goleman's (2001) model of EI (refer to Table 3 and Table 4) share several conceptual similarities. Firstly they both draw heavily on well-established personality traits and dispositions. For instance Goleman's model includes trustworthiness, conscientiousness, adaptability and empathy. Similarly, components of Bar-On's model include assertiveness, empathy, and impulse control. Indeed McCrae (2000) has recently mapped these EI variables onto the five-factor model of personality. As such, it has been argued that these models are simply a redescription of a broad range of personality traits as EI abilities or competencies (Mayer, Salovey & Caruso, 2000b).

A second issue concerning models of EI that draw heavily on personality variables is whether or not the components of the construct can be learnt. Research on the origins and development of personality has shown that traits and dispositions are moderately genetically determined and constant across the lifespan (Bouchard & Loehlin, 2001; Riemann, Angleitner, & Strelau, 1997). As such, it is unknown whether components of EI such as self-control, empathy or conscientiousness can be easily learned. Individuals may be shown, and indeed learn how to be more empathetic, conscientious and how to exert more self-control, however, their behavioural tendencies in the workplace, are unlikely to significantly change (McCrae, 2000).

A final issue concerning models that draw heavily on personality traits is that they typically place a broad (and sometimes conflicting) range of personality under the overarching umbrella of EI. For example, in referring to Goleman's model of EI (see Table 3), Mayer et al. (2000b), recently pointed out that those high in achievement drive are often not conscientious about completing responsibilities and adhering to rules, and that those high in

self-confidence sometimes tend to take advantage of others rather than to serve them. Given such breadth of the competencies under Goleman's model it is unlikely that individuals' can score high on all twenty dimensions of this model or that all twenty dimensions collectively contribute to workplace success.

The different theories of EI can be conceptualised in terms of a theory defining a disposition, affect or ability. Many of the attributes in both Goleman's and Bar-On's models extend beyond what is normally considered to be part of emotion or intelligence theory. Both researchers consider EI to be a disposition or affect, as opposed to Mayer and Salovey (1997) who define the construct in terms of a cognitive ability. It makes sense to consider the ability to label complex emotions accurately (Mayer and Salovey's model) as an aspect of intelligence. But can optimism (Bar-On's model) or motivation (Goleman's model) also reasonably be considered aspects of intelligence? The Mayer and Salovey model of EI appears to be the most well-conceptualised and useful description of the construct, however, little is known about its predictive validity in the workplace. Although the Mayer and Salovey model appears to be the most conceptually unique model of EI (in comparison to the others models reviewed in this section), it is not clear as to how this model relates to workplace variables and therefore whether it is the most appropriate model to use in organisational research.

3.4 Measuring Emotional Intelligence

Since the popularisation of models of EI, researchers have sought to measure individual differences in EI. A recent review describing a measure of EI based on personality traits by Dulewicz and Higgs (2000, p.341) posed two research questions: "is there any evidence that the claims made for EI can be substantiated in an organisational context?", and "is it possible to use established robust measures of personality or competency to measure EI, or some aspects of EI?" (p.342). The first question has some scientific merit, particularly considering that most of the claims as to the effectiveness of EI in the workplace have been largely theoretical. However, the second question loses sight of the need to develop the construct validity of EI. Dulewicz and Higgs created a measure of EI using two general

measures of personality. Some of the personality traits, which they extrapolated to define their measure of EI included: outgoing, conscientious, trusting, forthright, relaxed, emotionally stable, and socially bold. This conceptualisation essentially defines EI as a collection of personality traits.

It is pertinent at this point to highlight the differences between emotions and personality in order to illustrate that measures based upon personality traits are not a logical basis upon which to develop either a theory or an assessment of EI. In a recent examination into workplace performance and emotionality, Arvey, Renz and Watson (1998) compared the Big Five framework of personality (Costa & McCrae, 1985) to emotions. The first main distinction between personality and emotion is that emotion always refers to affective states and personality does not. The authors posed that two personality factors (extraversion and agreeableness) were more related to emotional display than to internal or felt emotions. The third and the fifth factors of personality defined by the Five Factor Model (conscientiousness and openness to experience) were purported to be unrelated to internal or displayed emotions and only the factor of neuroticism focused on internal emotions. Arvey et al. assert that personality and emotion represent different underlying constructs: personality represents an individual's predisposition to have a particular feeling and is considered to be relatively stable whereas emotions reflect what the individual is currently feeling and can vary. Therefore the establishment of measures of EI based upon currently existing measures of personality is not appropriate and suggests that the measure will not be an accurate assessment of EI.

The following sections of this thesis present three of the most comprehensively developed and widely used measures of EI. The first three sections presented below will outline the measures based upon the models reviewed in Section 3.3 above. Following this a more specific measure of EI will be investigated, that of a workplace specific measure. This measure of EI was developed from a large scale study which involved a factor analysis of the main measures of EI, extracting the underlying common dimensions from each of the main measures of EI (Palmer & Stough, 2001).

3.4.1 Measurement of Emotional Intelligence Based on Model 1

Based on their earliest model of EI, Salovey and Mayer (1990) developed the 30-item self-report Trait Meta Mood Scale (TMMS) to measure attitudes about emotions and mood regulation. According to Salovey, Mayer, Goldman, Turvey and Palfai (1995) the TMMS can be divided into three sub-scales; attention to feelings; clarity in discrimination of feelings; and mood repair. Essentially the TMMS was developed to assess individual variability in identifying one's own feelings, the feelings of others, regulating these feelings and the extent to which the information provided by these feelings is used to motivate adaptive social behaviour.

Using the TMMS (Salovey & Mayer, 1990), Fox and Spector (2000) investigated whether EI predicted performance in job interviews. They suggested that the TMMS was a weak measure of EI because it measured the extent to which an individual reports that they engage in certain behaviours, but did not assess the accuracy of these self-reports. Fox and Spector also questioned whether the construct of EI was relevant to interview performance. It is not surprising that these authors did not find the TMMS useful in the context of interview performance, primarily due to the fact that they tested a group of undergraduate students in a simulated interview process. The applications of their findings to 'real life' interview processes and outcomes are somewhat limited and may not accurately reflect the actual utility of the TMMS within this area.

A limitation of the TMMS (Salovey & Mayer, 1990) is that it is a self-report questionnaire and does not measure actual performance assessing emotional abilities. In order to develop a performance-based measure of EI the 402-item Multifactor Emotional Intelligence Scale (MEIS, Mayer et al., 1999) was constructed, followed closely by a subsequent revised 294-item Mayer, Salovey and Caruso Emotional Intelligence Test (MSCEIT, Mayer, Salovey & Caruso, 1999). The MEIS was designed to comprehensively assess Mayer and Salovey's (1997) model of EI (refer to Table 1). In much the same manner as an IQ test, the test contains a series of questions for which there are more and less correct answers based on consensual responses. The test yields an overall EI score, as well as sub-scale scores for each branch of their model. The perception of emotion is assessed by three sub-tests that

measure the perception of emotion in faces, in landscapes, and in abstract designs. In the faces sub-test the participant views a photograph of a face displaying a particular emotional expression. The respondent must report the amount of emotional content in it, judging for example, how much happiness, sadness, and fear is present.

Several sub-scales assess the extent to which people use emotion to facilitate cognitive activities. The synesthesia sub-test requires the participant to judge the similarity between an emotional feeling, and other subjective experiences such as temperatures and tastes. The idea is that such internal comparisons indicate that emotions are not only sensed and perceived, but also processed in some meaningful initial way.

Similarly, the understanding of emotions is measured by several sub-tests. These include blends, which require the participant to match a set of emotions, such as joy and acceptance, to another, single emotion that is closest to it. For example, 'which of these alternatives combine joy and acceptance: (a) guilt, (b) challenge, (c) mania, (d) love, or (e) desire'. Another sub-test that assesses the understanding of emotions is the transitions task, in which the test taker is asked what happens as an emotion intensifies or changes.

Tasks assessing the ability to manage emotions concern the best way to regulate emotions in oneself and in other people. Items typically describe a person with a goal of changing or maintaining a feel, such as staying happy, or overcoming sadness. The participant is presented with a scenario and must indicate which of a number of alternatives describes the best course of action in terms of reaching the goal. For example, if an upset person has the goal of cheering themself up, the alternatives might involve, talking to some friends, seeing a violent movie, eating a big meal, or taking a walk alone. Some alternatives are more likely to lead to cheering the person up than others, and those are scored more highly according to a consensus criterion.

Research with the MSCEIT and the earlier version the MEIS have found the scales to be reliable and to show a meaningful pattern of both convergent and discriminant validity, with the internal consistencies of both of these EI measures comparable to many standard

intelligence tests (Ciarrochi, Chan & Caputi, 2000; Mayer et al., 1999). Scores on the MEIS have been shown to be theoretically related to variables including empathy, parental warmth, and life satisfaction (Ciarrochi, et al.; Mayer et al., 2000b). Correlations between scores on the MEIS and personality indicate that it is related to, but relatively independent of, normal personality (Ciarrochi et al.). Recent research by Lam and Kirby (2002) reported that scores on the MEIS explained individual cognitive-based performance over and above the level attributable to measures of general intelligence. Collectively, these findings suggest that these measures of EI are measuring a construct that is unique, more specifically, they are measuring something over and above intelligence or personality traits.

In terms of organisational research the application of the MSCEIT and the MEIS is limited. Rice (1999) has shown that scores on the MEIS are related to certain aspects of effective team leadership and team performance. In this study, a short form of the MEIS was administered to 164 employees of an insurance company, who staffed 26 customer claim teams, and 11 of their team leaders. Department managers rated the claims teams on five variables: customer service, accuracy of claims processing, productivity, commitment to continuous improvement, and team leader overall performance. The MEIS scores of the 11 team leaders correlated (r = .51, p< .05) with the department managers ranking of effectiveness of the leaders. The overall EI of the 26 teams as measured by the average MEIS score across team members was significantly related to the department manger's rating of the team performance for customer service (r = .46, p< .05). While personality traits such as conscientiousness are linked to performance (Barrick & Mount, 1991, Barrick & Mount, 1993), this study suggests that EI may provide new information on outstanding performers.

The EI tests developed by Salovey and Mayer are often criticised by the scoring methodology employed (Conte, 2005). Due to the use of 'ability' tests these authors have attempted to identify "correct" answers to their questionnaires and have utilised techniques of consensus and expert scoring. Consensus scoring involves determining the correct answer to an item by pooling the judgements of hundreds of people and therefore assesses the extent to which the test taker's choice matches the majority opinion. Expert scoring

involves determining the correct answer to an item by pooling the judgements of 'experts' in emotions, a scoring technique which is similar to that used in cognitive ability tests. These methods of scoring have been subject to criticism as consensus scoring techniques are in "contrast to traditional measures of intelligence where an objective measure of truth is considered" (Matthews, Zeidner & Roberts, 2002, p.186) and due to the uncertainty as to how 'experts' were chosen when determining the correct answers to items (Matthews et al.). Finally, despite the evidence suggesting that the MEIS is related to effective leadership and performance (Rice, 1999), Van Rooy and Viswesvaran (2004) noted that the ability based EI measures, although being more distinct from personality, have higher correlations with general mental ability than do the self-report EI measures, leaving less room for these ability based EI measures to provide incremental prediction of work criteria (such as leadership and performance). Overall although the ability based measures of EI appear promising, there are still concerns and controversy as to the scoring and application of these of these measures.

3.4.2 Measurement of Emotional Intelligence Based on Model 2

Goleman's (1995a, 1998, 2001) contributions to the field of EI have been primarily theoretical (see Section 3.3.2 for a description of Goleman's theoretical models), although he has hypothesised about the effectiveness of EI in academia, the workplace and life in general. Published in the Utne Reader was Goleman's (1995b) measure of EI based upon his original theoretical model (presented in Table 2). This 10-item EI test measures all aspects of what Goleman considers EI including emotional abilities, general social competencies and character, although as emphasised by Mayer et al. (2000a) it is doubtful that Goleman intended that this scale would be used for serious research purposes. The 10-item test contains sub-scales from Goleman's original conceptualisation of EI including: knowing one's emotions, managing emotions, motivating oneself, recognising emotions in others and handling relationships.

A partnership between Goleman (1995a), Boyatzis (Boyatzis, Goleman & Rhee, 2000) and the Hay Group produced the 110-item Emotional Competence Inventory (ECI, Boyatiz et al.). Goleman states that "the ECI is the only instrument that incorporates the full depth of

my research. Other instruments use the words 'emotional intelligence' but the ECI is the genuine article" (Watkin, 2000, p.89). The ECI is a 360-degree measure designed to assess Goleman's (1998) model of EI (see Section 3.3.2 for a detailed description of this model). This test asks respondents to describe themselves, or another person by responding to declarative statements. For example; "knows how feelings impact own performance" (assessing emotional self-awareness); "strives to keep promises" (assessing conscientiousness); "understands the history and reasons for continuing organisational issues" (assessing organisational awareness); and finally "gains the buy-in of influential parties and enlists their help in convincing others" (assessing influence). Due to proprietary reasons, the developers of the ECI have not allowed many items to be reviewed by independent researchers (Conte, 2005) and therefore few independent, peer-reviewed assessments of the reliability and validity of this test have been undertaken or published. As emphasises by Conte, the reported findings on what the ECI is measuring are tentative at best.

3.4.3 Measurement of Emotional Intelligence Based on Model 3

A popular measure of EI (the self-report Bar-On Emotional Quotient Inventory, EQ-i, Bar-On, 1997) has been developed by Bar-On, and is based directly on his theoretical model (refer to Table 4). Bar-On (2000) has stated that the EQ-i is most accurately described as a measure of emotionally and socially competent behaviour. The EQ-i was constructed from a review of personality variables proposed to be related to life success and has since been criticised for its lack of divergent validity with personality measures (McCrae, 2000; Newsome et al., 2000).

The EQ-i (Bar-On, 1997) consists of 133 items that assess 15 sub-scales pertaining to five specific dimensions of emotional and social intelligence (refer to Table 4 for an outline of these dimensions). As with other self-report measures of EI, the EQ-i is described to provide an index of cross-situational consistencies (emotionally and socially) in competent behaviour and as such provides an estimate of an individual's EI (Bar-On, 2000). A wide number of correlation studies are reported in the technical manual, in support of the validity of the EQ-i as a measure of emotional and social intelligence. The results outlined in the

technical manual provide preliminary evidence for the construct validity of the EQ-i, however, as with most existing measures of EI; the validity of the EQ-i needs to be further established by independent research.

As with the MEIS and the MSCEIT (Mayer et al., 1999), the application of the EQ-i in organisational research studies is limited. However, its meaningful pattern of convergent validity suggests that it may have important applications in organisational settings. Preliminary research reported in the EQ-i technical manual suggests that scores may predict job performance and job satisfaction. Total EQ-i scores have been found to positively correlate with individual's sense of job competence and workplace satisfaction. Criterion group studies have shown that individuals from the Young President's organisation, who have risen to top leadership positions and have earned a minimum of five million dollars by 39 years of age, score higher than the established normative averages on the EQ-i; and that successful Air Force recruiters score higher than unsuccessful Air Force recruiters.

A recent study by Bachman, Stein, Campbell and Sitarenios (2000), reported the use of the EQ-i in an organisational setting. The authors examined EI in 36 debt collectors as a predictor of job performance and claimed that higher levels of EI would lead to enhanced job performance. Performance was assessed by the cash goal attained over a specific time frame and participants were grouped into 'best practices' (consistently high producers) and 'less successful' (consistently low producers) groups. The overall score for EI for the best practices group was 110 and for the less successful group was 102. The average total EI score according to the EQ-i manual (Bar-On, 1997) is 100, and therefore both of these groups were slightly above average. Out of the 15 subscales of the EQ-i eight did not show a significant difference between the two groups (these include: self-regard, interpersonal relationship, social responsibility, empathy, reality testing, flexibility, stress tolerance and impulse control). Representing one of the first studies to examine the utility of EI in an organisational setting this study has important implications for the future use of EI in this area.

Although these results are promising, one question that currently surrounds the EQ-i is the discriminant validity of the test from measures of personality. A recent study by Newsome, Day and Catano (2000) reports moderate to strong correlations between the five personality factors of the 16PF (Cattel et al., 1970) and the five EQ-i composite scores. The highest correlation in this study was between the total EQ scale sore of the EQ-i and the Anxiety factor of the 16PF ($r = -0.77$) leading these researchers to conclude "that the EQ-i is largely a measure of neuroticism" (Newsome et al., p.1014). Dawda and Hart (2000) have also demonstrated considerable overlap between the EQ-i and personality. These authors found that the total EQ scale score of the EQ-i correlated moderate to strongly with the NEO Five Factor Inventory (Costa & McCrae, 1992). Given this overlap with personality, it is possible that the EQ-i may be related to the various indices of success aforementioned because it is essentially measuring personality traits and dispositions known to account for occupational success. The discriminant validity of the EQ-i from personality traits and dispositions, and indeed whether it accounts for variance in other workplace variables not accounted for by well established personality traits has not yet been empirically substantiated.

3.4.4 A New Workplace Specific Measure of Emotional Intelligence

A limitation of the current tools assessing EI is that they were not designed specifically to assess emotions in the workplace, and it is reasonable to assume that our emotional displays at work may significantly differ from our displays in our personal and family lives. A new measure of EI that has been designed for use in organisational settings is the workplace Swinburne University Emotional Intelligence Test (SUEIT, Palmer & Stough, 2001). The workplace SUEIT is a self-report inventory that assesses the way people typically think, feel and act with emotions at work and was developed from a large scale factor analysis which attempted to draw out the key EI behaviours underpinning the predominant measures of EI. This test, therefore, is based on the congruency between the models and measures of EI, that is, it extracted the EI dimensions common to each measure of EI and combined them into a five-factor model and measure.

The SUEIT provides five sub-scale scores that indicate specific EI capacities according to the five dimensions of the model: (1) Emotional Recognition and Expression – ability to identify feelings and emotional states, and to express those to others; (2) Understanding Emotions (external) – ability to identify and understand the emotions of others and those that manifest in external stimuli; (3) Emotions Direct Cognition – extent to which emotions and emotional information is incorporated in decision making and problem solving; (4) Emotional Management – ability to manage positive and negative emotions within oneself and others; and (5) Emotional Control – ability to control strong emotional states experienced at work. Correlations reported in the technical manual of the SUEIT (Palmer & Stough, 2001) suggest that scores are related to but relatively independent of well established personality traits, and much like the MSCEIT, it is measuring something new and unique. Similarly, Gignac (2004) reported that the construct of EI, when measured by the SUEIT, was not redundant when assessing its relationship with personality, again suggesting the SUEIT measure of EI is related to, but has independence of, personality. However these findings should be further established by independent research.

In one of the first investigations as to the utility of the SUEIT in the workplace Gardner and Stough (2002) examined the relationship between EI and leadership, measured by the Multifactor Leadership Questionnaire (Bass & Avolio, 2000) in 110 senior level managers. The authors found a strong relationship between transformational leadership and overall EI ($r = 0.67$, $p<.01$), as well as a negative relationship between laissez-faire leadership (a 'do nothing' style of leadership) and overall EI ($r = -0.46$, $p< .01$). From the sub-scales of the SUEIT, understanding emotions (external) and emotional management emerged as the best predictors of effective leadership, providing preliminary evidence for the utility of the SUEIT in leadership selection and in occupational research.

A similar study by Downey, Papageorgiou and Stough (in press) examined the relationship between EI, leadership and intuition in a group of female managers. These authors compared the workplace SUEIT and the TMMS in order to evaluate their ability to predict leadership behaviour and use of intuition. Downey et al. reported that the workplace specific measure of EI (the SUEIT) was a better predictor of effective leadership behaviour

than the general measure of EI (the TMMS). The authors suggest that workplace specific measures of EI have greater utility in the context of predicting workplace outcomes, over and above general measures of EI. Consequently this paper provides support for the utilisation of a workplace specific measure of EI in the current thesis as the aim in this thesis is to assess workplace outcomes (such as occupational stress, job satisfaction and organisational commitment).

In light of the work by Gignac (2004), Gardner & Stough (2002) and Downey et al. (in press) it appears that the SUEIT measure of EI shows some independence from traditional measures of personality and shows utility in predicting workplace outcomes. Therefore, this measure of EI will be utilised in the current thesis for three reasons. Firstly, this test is the only Australian workplace measure of individual EI (although there does exist another Australian measure of EI, however this test specifically profiles the EI of individuals in work teams, Jordan, Ashkanasay, Hartel and Hooper (2002)) and therefore appropriate normative information for the current thesis is available. Secondly, in comparison to the other major measures of EI, this test was developed specifically for use in the workplace with questions focussed on emotional experiences at work. Finally, this measure is relatively short in length (comprising 64 questions) which makes it practical to implement in an organisational setting where time is limited.

3.4.5 Summary of the measures of emotional intelligence

Establishing links between EI and workplace variables depends greatly upon well-validated and reliable assessment of EI. As such, a number of measures of EI have been developed from the models of EI (presented in Section 3.3) including both performance based and self-report measures. In general the performance based measures of EI are comprised of emotion related questions and claim to assess actual emotional abilities and with the processing of emotional information. In comparison, self-report measures of EI assess emotion related competencies which are manifested in specific traits and dispositions and therefore these measures index cross-situational consistencies in emotional behaviour. Presented in this section was an outline of the commonly used measures of EI. Each of these measures was examined in regards to their validity and their utility for research in the

workplace. A new workplace measure of EI (the SUEIT, Palmer & Stough, 2001), which is based upon existing models of EI, was also investigated. It was concluded that this measure of EI has shown some preliminary validity for use in organisational research and therefore this measure will be adopted in the current thesis.

3.5 Conclusion

Despite the broad interest in EI there is little consensus concerning how to best conceptualise and measure this construct in organisational research. Generally performance based measures are purported to assess one's actual capacity while, in contrast, self-report measures of EI are assumed to provide an indication of one's beliefs about one's own EI. However, as with the experience of occupational stress, it may be that our perception of our EI behaviours play a major role in utilising these behaviours and as such self-report measures of EI may prove to be equally as reliable as performance based measures, and in fact, Bandura (1977) noted that people often act upon their beliefs as opposed to their actual abilities. In terms of practicality, self-report measures are more applicable in organisational research as currently no workplace specific performance based measure exists. Secondly, existing performance based measures tend to be overly long (for example, the MSCEIT, Mayer, et al. (1999) contains 294 questions) which can be impractical for use in organisations and finally, these 'ability' measures have been considered to be controversial in their scoring method. Therefore, it is argued in this thesis that to best measure EI in the workplace a workplace specific EI tool should be utilised and that that tool may be self-report in its application. Study 1 (presented next in Chapter 4 to Chapter 8) aims to thoroughly explore the relationship between EI in the workplace and a number of workplace variables (specifically variables involved in the occupational stress process; refer to Chapter 2).

CHAPTER 4:
STUDY 1: THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND THE OCCUPATIONAL STRESS PROCESS

4.1 Introduction

Chapter 2 reviewed the literature relating to the experience of occupational stress. It identified potential causes and consequences of stress and presented these in an integrated occupational stress process model. The chapter also explored the role of emotion in the stress process and noted that there was a lack of empirical literature evaluating emotion and stress. Chapter 3 therefore reviewed the influence of emotion in the workplace and outlined a new psychological construct, EI, which may provide a means to measure and assess emotional abilities at work. Chapter 4 outlines the prevalence of occupational stress in the workplace and highlight the consequences of experiencing stress in the workplace. This chapter will also review the empirical literature examining the role of EI in the stress process in order to justify the implementation of research in the current thesis. This chapter will explore the role of negative affectivity (NA) in studies relying on self-report assessments. Finally, the objectives and hypothesis of Study 1 will be detailed.

Most employees undergo stress as a normal part of their jobs. However, some employees experience stress more severely than others, to a point where they may need time off work. Stress can be defined as an imbalance between an individual's perceived environmental demands and their perceived ability to deal with these demands, and is generally thought to be subjective in nature, rather than objective (Cox, 1978; Lazarus & Folkman, 1984; McGrath, 1970). Thus the experience of occupational stress occurs with a person's appraisal of their ability to deal with exposure to psychosocial and physical conditions in the workplace (Cooper et al., 1999).

The area of occupational stress has rapidly grown over the last two decades, to the extent that there are now two international journals devoted entirely to its study (Spector & Goh, 2001). The incidence of occupational stress in Australia has steadily increased over the past decade with ComCare reporting psychological injury as a key contributor to the increase in premiums in 2003/04. Although in 2003/04 only 7% of claims were for psychological injury, these claims accounted for 27% of the total cost of workers' compensation claims (ComCare Annual Report, 2003–2004). ComCare forecast that claims for psychological injury in Government agencies will increase by an additional 38% in 2004/05. The Victorian WorkCover Authority, in their annual Statistical Summary (2003–2004), show that the number of claims for mental disorders (the category for occupational stress) has increased from 1,329 claims made in 1994/95 to 2,912 made in 2003/04, accounting for 9% of total compensation claims. WorkCover in Victoria has paid out over $936 million dollars in compensation for mental disorders from September 1985 to June 2004. In the United Kingdom (UK), the Health and Safety Executive (2005) reported that half a million employees in the UK experience work-related stress at a level they believe is making them ill; also, up to 5 million employees in the UK feel 'very' or 'extremely' stressed by their work. Finally, the Health and Safety Executive (2005) reported that in 2003/4 12.8 million working days were lost due to stress, depression and anxiety. The increasing incidence of occupational stress in the Australian and international workforce makes it a key construct for researchers to evaluate and understand, leading to the development of specialised intervention strategies to attempt to reduce the incidence of stress in the workplace.

To date, empirical evidence supports relationships between high levels of occupational stress and poor psychological health, decreased job satisfaction, decreased organisational commitment, increased job insecurity, increased work-family conflict and poor physical health (Baker, 1985; Beeha, Walsh, & Taber, 1976; Burke, 2002; Evans & Steptoe, 2002; Ganster & Schaubroeck, 1991; Greenhalgh & Rosenblatt, 1984; Jimmieson, 2000; Knussen & Niven, 1999; Quick, Murphy & Hurrell, 1992; Sverke & Hellgren, 2002; van Dick & Wagner, 2001; Whitener, 2001). Currently relatively little research has examined the role emotions may play as a moderator in these relationships.

In a recent theoretical paper, Spector and Goh (2001) examined the role of emotion in occupational stress. They employed a narrow definition of job stress as "any condition or situation that elicits a negative emotional response, such as anger/frustration or anxiety/tension" (p.196) in an attempt to overcome the broadness of previous definitions and focus on negative emotional responses. The authors suggested that emotions influence how the work environment is perceived, that is, whether a particular condition is appraised as a job stressor or not. They further suggested that these appraising emotions may lead to psychological and physical strains. Psychological strain might result from continual negative emotional experiences and may lead to decreases in job satisfaction and organisational commitment. Physical strains (for example, suppression of immune system, heart disease) may result from the physiological components of experienced emotions that can adversely affect health. In support of this theory it seems suitable to propose that an individual's ability to manage and control their emotions (particularly negative emotions) in the workplace will influence the outcome of stress.

Emotional intelligence was originally conceptualised by Salovey and Mayer (1990) and was revised by the same authors in 1997. According to their model, EI involves four main abilities: identifying emotions, using emotions, understanding emotions and managing emotions. It has been suggested that there are individual differences in EI relating to differences in our ability to appraise our own emotions and those of others, and that individuals higher in EI might be more open to internal experience and better able to label and communicate those experiences (Mayer & Salovey, 1993). As emphasised by Mayer (2001) there are generally two types of EI in the published literature, the more popular EI which is said to be easily acquired and learnt, out predicts traditional measures of general intelligence, and is one of the best predictors of life success. The second 'type' of EI is the more scientifically based construct, which is built around the notion that EI abilities or competencies are intercorrelated but distinct from general intelligence. Despite the different approaches to EI, empirical research tends to be based on the second 'type' of EI which, as suggested by Mayer, has the most potential to contribute to scientific psychology.

Previous literature has examined the role of workplace EI in leadership, performance and life satisfaction (Barling, Slater, & Kelloway, 2000; Dulewicz, 2000; Gardner & Stough, 2002; George, 2000; Goleman, 1995; 1998; Miller, 1999; Palmer et al., 2001; Sosik & Megerian, 1999; Watkin, 2000). However, the relationship between EI and occupational stress and outcomes of stress (including health, job satisfaction, organisational commitment and work-family conflict) has been relatively under investigated, and attempts that have been made to examine these relationships have been largely inconsistent in their findings.

In one of the first studies to examine the relationship between EI and stress, Slaski and Cartwright (2002) investigated EI, stress and health in a group of managers. These authors assessed stress by asking respondents to indicate on a single scale the extent to which they perceived their life to be stressful at that time. Slaski and Cartwright reported that there were significant relationships between EI, stress and health and that EI may play a role in moderating the stress process and increasing an individual's resilience to stress.

The paper by Slaski and Cartwright (2002) was limited in two ways. Firstly EI was not measured using a tool that was designed specifically for use in the workplace, and therefore the questions were not workplace oriented. Also, this particular tool (EQ-i; Bar-On, 1997) has been described previously to be an assessment of "not only emotional 'abilities' but also a number of non-ability characteristics that relate to personality, chronic mood, and character" (Ciarrochi et al., 2000; p.541), raising the problem that such a test may not have shown high discriminant validity nor may it be measuring EI abilities alone. Secondly, stress was measured by respondents being asked to indicate on a single scale the extent to which they believed their life to be stressful at that point in time. The construct of occupational stress is highly complex, and to assess it using a single question may result in a loss of important information relevant to the construct and potentially distort its relationship with other variables. We know from the work of researchers such as Cooper and Marshall (1978) that stress is multi-faceted and can arise from many sources in the workplace (such as factors intrinsic to the job, relationships at work, career development) and so a more appropriate and useful way to examine the role of stress in this study would have been to utilise a more comprehensive measure of occupational stress.

Slaski and Cartwright (2002) suggested that EI may play a role as a moderator in the stress process, a hypothesis which Ciarrochi et al. (2002) examined. Ciarrochi and colleagues examined the role of EI in understanding the relationship between stress and mental health (measured by prevalence of depression, hopelessness and suicide ideation). In a sample of university students these authors examined objective (meaning there are 'right' and 'wrong' answers determined by consensus) emotional perception (measured by the stories test; Mayer & Geher, 1996), subjective (based upon individual beliefs and to which there are no 'right' or 'wrong' answers) emotional perception (measured using the Schutte et al. EI measure; 1998), life stress, daily hassles, suicide ideation, depression and hopelessness. Ciarrochi et al. report no significant correlations between life stress and their measures of EI. There were also no significant relationships between emotional perception (the objective EI measure) and stress or health. Daily hassles showed a significant relationship with managing one's own emotions (the subjective EI measure), as did suicide ideation, depression and hopelessness. These correlations indicate that university students who report being able to manage their own emotions, also reported fewer daily hassles, less suicide ideation, depression and hopelessness compared with those students reporting lower levels of managing emotions. Further analysis revealed that the objective measure of EI moderated the relationship between daily hassles and the three mental health variables, which the authors interpreted as meaning that emotionally perceptive people are *more* impacted by stress and express higher levels of poor health (compared to people lower in emotional perception). Results for the subjective measure of EI revealed that managing the emotions of others significantly moderated the relationship between daily hassles and mental health, which was explained by the authors as meaning that students high in managing others' emotions respond *less* to stress with feelings of suicide ideation than other individuals who are low in managing emotions of others.

The results of the two different measures of EI (one objective, one subjective) in the paper by Ciarrochi et al. (2002) appear contradictory but are explained by the authors via two hypotheses. The insensitivity hypothesis proposed that people low in emotional perception repress or ignore the hassles in their life. Whilst the confusion hypothesis proposed that although participants who are low in emotional perception are susceptible to stress they do

not realise the adverse effects and so are confused about what they are feeling. Ciarrochi et al. suggest that the reason for being high in managing others emotions (the subjective measure of EI), which led to a better response to stress and less suicide ideation, was because the factor 'managing others emotions' measures the extent to which an individual assists others in positively regulating their moods and the extent to which they try to establish intimacy with the individual. These authors further suggest that this behaviour leads to closer friendships and increased social support which is of benefit to the individual during times of stress. Although Ciarrochi et al. examined two different facets of EI (emotional perception and managing others emotions), the results are still somewhat unclear. It appears that these authors suggest that being lower on particular aspects of EI results in ignorance and confusion in recognising stress and its consequences, and that being high on a different aspect of EI fosters strong bonds between people giving them the social support they need to deal with stress.

The paper by Ciarrochi et al. (2002) is limited in methodology and is unclear in its explanation of the results. These authors utilised a student population and assessed their daily hassles (such as troublesome neighbours and financial insecurity) and life experiences to measure stress. It would be most unusual for these students (the mean age reported was 20 years) to have experienced a range of these hassles and life events, which might have influence the results of this paper. Secondly, the specific subjective measure of EI utilised by Ciarrochi et al. has been criticised by Petrides and Furnham (2000) as having "many psychometric problems" (p.317) and they "would caution further research with it" (p.318), which suggests that a different measure of EI may produce different outcomes in relation to stress and health. Although there are some difficulties in interpreting the findings of this paper it was the first attempt of researchers to examine the role of EI as a moderator in the stress–outcomes relationship and provides a foundation for further research into this area.

Donaldson-Feilder and Bond (2004) attempt to clarify the role of EI in terms of its ability to predict workplace well-being (well-being operationally defined and measured as psychological health, physical health and job satisfaction). These authors did not find evidence to suggest that EI predicts well-being over other variables (acceptance and job

control) and surmised that the theory that EI regulates emotion as a mechanism for generating positive well-being is not supported. Again the methodology of this paper makes it difficult to support this conclusion. In this paper these authors used the shortened version of the Trait Meta Mood Scale (TMMS; Salovey et al., 1995) however they provide just one 'summed' score of EI and not the scores on the three-subscales of this test (Attention, Clarity and Repair). In the original paper on the TMMS, Salovey et al. always reported on the three subscales and do not suggest combining these sub-scales to produce an overall score of EI. It would have been more useful to examine the three subscales of the TMMS independently and may have resulted in different outcomes between EI and well-being due to the fact that the three sub-scales of the TMMS are purported to measure theoretically different processes (see Salovey et al).

A recent paper by Tsaousis and Nikolaou (2005) also explored the relationship between EI and physical and psychological health. These authors hypothesised that high levels of EI would be related to better psychological and physical health, and that EI would correlate negatively with frequency of smoking and drinking and positively with improved quality of life. Tsaousis and Nikolaou report that both hypotheses in their paper were supported and that high levels of EI were associated with better health and improved quality of life. These results are similar to the findings of Slaski and Cartwright (2002) but in contrast to those presented by Ciarrochi et al. (2002) and Donaldson-Feilder and Bond (2004). The disparity in findings from the four studies presented makes it difficult to understand the role of EI in health and well-being. Both Slaski and Cartwright and Tsaousis and Nikolaou report a significant relationship between EI and health, suggesting that higher levels of EI are related to better health outcomes, whereas Ciarrochi et al. and Donaldson-Feilder and Bond both report no significant relationship between EI and health, suggesting no direct relationship between EI and health. Each of these papers used a different measure of EI which could contribute to the differences in the results obtained. However, regardless of the methodology employed by each paper there still exists uncertainty as to the relationship between EI and health variables.

Two additional papers examining the role of EI and outcomes of stress both focused on job satisfaction and organisational commitment (Abraham, 2000; Carmeli, 2003). Abraham hypothesised that the social skills component of EI is related to positive interpersonal relationships and would increase feelings of job satisfaction and decrease occupational stress. She further hypothesised that these social skills would foster networks of social relationships which in turn would increase an employee's commitment to the organisation. Using the self-report Schutte et al. (1998) EI measure in a group of 79 employees Abraham reported that EI predicted a large amount of the variance in job satisfaction and organisational commitment. Carmeli used the same measure of EI in his paper which examined the relationship between EI, job satisfaction, organisational commitment and work-family conflict. He suggested that EI is a competency that drives positive outcomes and behaviours. Carmeli hypothesised that high levels of EI would result in positive moods and feelings which would generate high levels of job satisfaction, that EI would augment a higher level of organisational commitment as employees would be able to maintain positive affective states, and finally he hypothesised that employees high in EI are more able to balance work-family conflict as they recognise and manage feelings of conflict as they occur. Ninety-eight senior managers participated in Carmeli's research and he reported a significant relationship between EI and job satisfaction, organisational commitment and work-family conflict. He suggests that his paper goes "beyond the simple premise of the importance of emotional intelligence to demonstrate the extent to which the latter augments favourable attitudes and outcomes" (p.806) and that emotionally intelligent senior managers have an emotional attachment to their organisation making them more committed and satisfied. Carmeli concludes that the emotionally intelligent manager is more sensitive to the emotions produced by the conflict that may arise between the work life and the home and therefore is more able to deal with this conflict, thereby lessening it, compared with managers with lower levels of EI.

As mentioned above, the measure of EI used in both Abraham (2000) and Carmeli (2003), has been heavily criticised in the literature (see Petrides & Furnham, 2000), therefore implications from studies employing this measure may be somewhat limited. However, these studies greatly advance current knowledge in this area (as they are the first to

examine EI and these workplace variables) and so provide a useful foundation on which to continue and improve research.

One of the major limitations of previous literature examining EI in the workplace is the use of a general EI tool, rather than a tool designed specifically for use in the workplace with questions aimed at assessing behaviours *at work* (which may differ markedly from behaviours at home). A way to overcome this limitation in this thesis is to use a new measure of EI which has been developed specifically for use in the workplace: the Swinburne University Emotional Intelligence Test (SUEIT; Palmer & Stough, 2001). This measure was developed from a large scale factor analysis and extracted the dimensions of EI common to each of the major measures of EI. The SUEIT consists of five major sub-scales of EI and measures the way an employee thinks, feels and acts using emotions and emotional information; (1) *Emotional Recognition and Expression* – ability to identify feelings and emotional states, and to express those to others; (2) *Understanding Emotions (external)* – ability to identify and understand the emotions of others and those that manifest in external stimuli; (3) *Emotions Direct Cognition* – extent to which emotions and emotional information is incorporated in decision making and problem solving; (4) *Emotional Management* – ability to manage positive and negative emotions within oneself and others; (5) *Emotional Control* – ability to control strong emotional states experienced at work.

A second limitation in the literature on EI and occupational stress has been the use of a limited measure of stress. For example, the paper by Slaski and Cartwright (2002) used a single item to assess stress at work which, after a thorough investigation of the occupational stress literature (see Chapter 2 of this thesis) is not sufficient to capture the number of sources of stress which relate to the employee experiencing feelings of stress. A more thorough questionnaire measuring occupational stress which draws on most of the major theories of stress, particularly the antecedents of occupational stress outlined by Cooper and Marshall (1978; see Section 2.2.3 of this thesis), is the Occupational Roles Questionnaire (ORQ) from the Occupational Stress Inventory – Revised Edition (OSI-R; Osipow, 1998). The ORQ has been used extensively in occupational stress research and comprises six

major sub-scales each assessing work roles known to be associated with stress; (1) *Role Overload* – when job demands exceed resources and whether the individual is able to accomplish workloads; (2) *Role Insufficiency* – whether the individual's training, education, skills, and experience are appropriate to job requirements; (3) *Role Ambiguity* – whether priorities, expectations, and evaluation criteria are clear to the individual; (4) *Role Boundary* – whether the individual is experiencing conflicting role demands and loyalties at work; (5) *Responsibility* – whether the individual has, or feels, a great deal of responsibility for the performance and welfare of others in the workplace; (6) *Physical Environment* – whether the individual is exposed to high levels of toxins or extreme physical conditions.

Although having limitations in methodology, the empirical research, presented above, by Slaski and Cartwright (2002), Ciarrochi et al. (2002), Donaldson-Feilder and Bond (2004), Tsaousis and Nikolaou (2005), Abraham (2000) and Carmeli (2003) provide a useful basis upon which some tentative hypothesis and objectives can be made for the current thesis (see Section 4.3).

4.2 The Role of Negative Affectivity

One important factor that has been omitted so far in this thesis but warrants inclusion in Study 1 is the role of negative affectivity (NA, often measured as the personality factor Neuroticism). Negative affectivity refers to a general disposition to experience negative emotions. This individual disposition has been purported to influence research in many areas of psychology, including stress research.

An influential paper by Watson, Pennebaker and Folger (1987) discussed the role of NA in stress measurement. In a review of literature of that time these authors suggested that individuals high on NA were more likely to report stress and negative emotions even in the absence of any overt or objective stressor, and that any measure of occupational stress would be expected to correlate strongly with tests of NA. However, Watson and colleagues noted that NA itself is not highly predictive of health status and that it is also a poor

predictor of health-relevant behaviour. Overall these authors claimed that NA would bias self-reports of occupational stressors and strains.

A response to the paper by Watson et al. (1987) was made by Spector, Zapf, Chen and Frese (2000) who agreed that NA is important but disagreed that it should become routine to treat it as a bias factor and to statistically control for it. Spector and colleagues suggested that even if NA had a substantiative role in occupational stress research that it should not be partialled out. The problem with partialling, outlined by Spector et al., is that variance shared with NA is removed *regardless* of why NA correlates with these other variables. Even if NA does bias occupational stress research, removing NA may not actually eliminate this bias but may instead serve to distort the effects of variables that are causally related, that is, the true variance shared by stressors and strains may be unintentionally removed when NA is partialled out. These authors further consider partialling out NA to be a mistake due to the fact that in order to partial out a variable in statistical analyses the researcher firstly needs to be clear on what that variable is doing. What are the inferences made once NA is partialled? "(W)e cannot magically turn self-report measures into objective measures of the work environment by partialling *one* possible bias" (Spector et al., 2000, p.81). Spector et al. conclude their paper on NA and stress research by strongly recommending against partialling out NA for the purpose of controlling nuisance variance. These authors suggested that large differences between zero-order and first-order partials is consistent with the bias hypothesis of NA, but that this evidence alone does not justify concluding that NA is a proven bias in occupational stress research.

Research examining EI and NA is somewhat different to the occupational stress literature. Due to already existing problems with measuring EI (refer to Chapter 3 of this thesis) and the continual debate in the literature as to which tests are accurately measuring EI and which are repacking other constructs (such as empathy and personality) and calling this EI, the role of NA has been extremely difficult to assess. Two recent papers (Saklofski, Austin & Minski, 2003; Schulte, Ree & Carretta, 2004) included Neuroticism (often used to assess NA) in their analysis with EI, both reporting correlations between total EI scores and Neuroticism as moderate (r = -.37, p<.001 and r = -.28, p<.05 respectively). Saklofski et al.

suggested that this result is in accordance with expectations that EI is discriminant from measures of personality and that the construct of EI shows incremental validity beyond Neuroticism.

Regardless of the purported role of NA, researchers generally agree that it needs to be measured in occupational stress and EI research (Ciarrochi, Forgas & Mayer, 2001; Winefield, Gillespie, Stough, Dua & Hapuararchchi, 2002). The most common way to assess NA is through the personality trait Neuroticism, a measure which will be included in the current study.

4.3 Objectives and Hypothesis for Study 1

The relationship between workplace EI and the stress process as well as the inconsistencies in previous empirical research has been outlined in this chapter and in the two preceding chapters of this thesis. The overall aim for Study 1 was to re-examine the role of EI in the stressor-strain relationship. Specifically, Study 1 aims to assess the direct relationship EI has with stressors and strains as well as the role of EI as a moderator in the stress-health relationship. The objectives and hypotheses for the evaluation of Study 1 are outlined below.

4.3.1 General Exploration of Emotional Intelligence, Stress and Strain

Five general objectives were formulated to explore the relationship between EI, occupational stress and strains (measured as employee health). There was not enough literature in this area to construct specific hypotheses.

4.3.1.1 Objective 1: Exploration of the Relationship between Emotional Intelligence and Occupational Stressors

Are the dimensions of EI (*Emotional Recognition and Expression, Understanding Emotions, Emotions Direct Cognition, Emotional Management, Emotional Control* and *Total EI*) as measured by the SUEIT (Palmer & Stough, 2001) related to stressors (*Role Overload, Role Insufficiency, Role Ambiguity, Role Boundary, Responsibility* and *Physical Environment*) as measured by the ORQ (Osipow, 1998)?

4.3.1.2 Objective 2: Exploration of the Relationship between Emotional Intelligence and Strain

A. Explore whether the EI dimensions are related to *Psychological Health*.

B. Explore whether the EI dimensions are related to *Physical Health*.

4.3.1.3 Objective 3: Explore the Role of Emotional Intelligence as a Moderator in the Stressor-Strain Relationship

A. To investigate whether there is a relationship between stressors and *Psychological Health*.

B. To investigate whether there is a relationship between stressors and *Physical Health*.

C. If a relationship does exist for Objective 3A and 3B, then to explore whether *Total EI* moderated that relationship.

4.3.1.4 Objective 4: Explore the Relationship between Stressors, Strains and Negative Affectivity

In the relationship between stressors and strains (specifically *Psychological* and *Physical Health*), are the differences between the zero order correlations and first-order partials (partialling *Neuroticism*) large enough to suggest the role of a bias?

4.3.1.5 Objective 5: Explore the Role of Emotional Intelligence in Predicting Stressors and Strains once Negative Affectivity has been controlled for

If Objective 1 and Objective 2 are satisfied, and the five dimensions of EI show a significant relationship with stressors and strains, then explore the role of those EI dimensions in predicting stressors and strains once NA has been controlled for.

4.3.2 Hypothesis for Emotional Intelligence and Workplace Variables

Four hypotheses were formulated to assess the relationship between EI and workplace variables (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*). Examination of relevant literature presented in this thesis allowed for some specific hypotheses to be made in Study 1.

4.3.2.1 Hypothesis 1: Job Satisfaction

It is hypothesised that EI will be positively related to *Job Satisfaction*, such that high levels of EI will be associated with high levels of *Job Satisfaction*.

4.3.2.2 Hypothesis 2: Organisational Commitment

It is hypothesised that EI will be positively related to *Organisational Commitment*, such that high levels of EI will be associated with high levels of *Organisational Commitment*.

4.3.2.3 Hypothesis 3: Work-Family Conflict

It is hypothesised that EI will be negatively related to *Work-Family Conflict*, such that high levels of EI will be associated with low levels of *Work-Family Conflict*.

4.3.2.4 Hypothesis 4: Negative Affectivity

It is hypothesised that there will be a moderate negative correlation between EI and NA (as measured by *Neuroticism*), such that high levels of EI will be associated with low levels of NA.

4.4 Conclusion

The preceding chapters of this thesis have provided systematic reviews of the stress process including the identification of major stressors and strains in the workplace, and of the role of emotion in the workplace and in the occupational stress process. The role of emotion in the stress process is thoroughly evidenced; however, empirical research in this area remains limited. The emergence of a new construct in psychology, EI, has opened the floodgates for researchers to suggest what EI can and cannot predict, particularly in relation to individual and organisational success. Theoretically the area of EI in the workplace is advancing more rapidly than empirical work and it is here that a large gap in the literature is evident. No researcher has comprehensively examined the role of EI in the occupational stress process using appropriate workplace measures of EI and a number of indices of occupational stressors and strains. The current chapter outlined the need for a greater understanding of the causes and consequences of stress due to the growing incidence of occupational stress in the Australian workforce. This chapter also highlighted recent empirical studies which have attempted to link EI to the stress process. It detailed the role of NA in this process and surmises that automatically partialling out this disposition as a source of bias is not entirely appropriate. Finally, this chapter outlined the objectives and hypothesis for Study 1, each of which are related to the dimensions assessed in this study.

The following chapter of this thesis presents the methodology employed in the current study and outlines the manner in which data will be analysed. Subsequently Chapter 6 will present the results of Study 1. These results will be discussed in depth in Chapter 7.

CHAPTER 5:
STUDY 1: METHODOLOGY

5.1 Participants

Using a cross-sectional design, 320 employees (166 females, 154 males) participated in Study 1. The demographic characteristics of this group are presented in Table 5 below.

Table 5: Frequencies and Descriptive Statistics for the Demographic Characteristics of Employees in Study 1

Demographic Variable	**N = 320**
Age, years (mean (SD))	39.4 (10.8)
Gender	
Female (N (%))	166 (51.9)
Male (N (%))	154 (48.1)
Occupation Classification	
Accountant (N (%))	3 (0.9)
Administration (N (%))	46 (14.4)
Analyst (N (%))	8 (2.5)
Consultant (N (%))	25 (7.8)
Engineer (N (%))	30 (9.3)
Information Technology (N (%))	19 (5.9)
Manager (N (%))	103 (32.1)
Teacher (N (%))	62 (19.3)
Other (not otherwise specified)	24 (7.5)
Education Level	
Postgraduate Degree (N (%))	104 (32.4)
Undergraduate Degree (N (%))	91 (28.3)
Tertiary Certificate (N (%))	48 (15.0)
High School Certificate (N (%))	35 (10.9)

Demographic Variable	**N = 320**
Living Arrangements	
Living alone (N (%))	13 (4.0)
Live with partner only (N (%))	39 (12.1)
Live with partner and others (N (%))	67 (20.9)
Live with others, not partner (N (%))	36 (11.2)
Number of Financial Dependents	
Zero (N (%))	135 (42.1)
One or two (N (%))	86 (26.8)
Three or four (N (%))	60 (18.7)
Five or more (N (%))	7 (10.3)
Length of time employed at current organisation	
Five or more years (N (%))	121 (37.7)
Between one and five years (N (%))	125 (38.9)
Between six months and one year (N (%))	36 (11.2)
Under six months (N (%))	31 (9.7)
Number of days absent (due to illness) in the previous six months (mean (SD))	2.96 (5.27)
Number of employees supervised (mean (SD))	9.83 (34.83)
Number of hours worked per day (mean (SD))	8.58 (1.46)

Overall, employees from ten different public organisations participated in Study 1. The types of organisations were school/university (4), business consulting (2), insurance (2) manufacturing (1), and not-for-profit (1).

Ethics approval for the study was sought and received from Swinburne University of Technology. Refer to Appendix 1 for the information sheet and consent form.

5.2 Procedure

5.2.1 Recruitment

Employees for the study were recruited from Melbourne and its surrounding suburbs (Australia). Interest was generated in this study in part due to a Short Course offered at Swinburne University of Technology on EI. Participants in the course were made aware (verbally) of the opportunity to have employees in their organisation take part in a research project. They were given an email address to contact for further information. From this interest, various other organisations learnt about the research via "word of mouth" and made contact with Swinburne University of Technology, expressing a desire to participate in the research project. All interested organisations and individuals were sent out information on the study via email and, if they consented, the individual employees were posted a copy of the questionnaire as well as a reply paid envelope. All responses to the questionnaire were kept confidential from the employing organisation. In return for their participation all employees received a confidential feedback report on their EI (via email or post).

5.2.2 Instruments

The same questionnaire package was used for all employees in this study. This package consisted of six main themes aimed at capturing information on a large number of variables, not all of which were relevant to the present study (see Appendix 1 for a complete copy of the questionnaire). The questionnaire package consisted of the Swinburne University Emotional Intelligence Test (Palmer & Stough, 2001), the Occupational Roles Questionnaire from the Occupational Stress Inventory – Revised Edition (Osipow, 1998), the General Health Questionnaire – 12 (Goldberg & Williams, 1988), Physical Health Symptoms (taken from Winefield, Gillespie, Stough, Dua & Hapuararchchi, 2002), Job Satisfaction (Warr, Cook & Wall, 1979), Organizational Commitment Questionnaire (Mowday & Steers, 1979), Work-Family Conflict (Frone & Yardley, 1996), and Neuroticism from the NEO Five-Factor Inventory (Costa & McCrae, 1992). Participants were posted the questionnaire and were requested to complete it within a 2-week period and return it in the reply paid envelope provided.

5.2.2.1 The Swinburne University Emotional Intelligence Test

The Swinburne University Emotional Intelligence Test (SUEIT) was used to evaluate self reported emotional intelligence (Palmer & Stough, 2001). The SUEIT was developed to index the way people typically think, feel and act with emotions at work. The SUEIT is scored on a five-point Likert scale and takes approximately 15 minutes to complete. The SUEIT consists of 64 items and provides a *Total EI* score as well as score on five sub-scales (definition):

1. *Emotional Recognition and Expression*, 11 items (the ability to identify one's own feelings and emotional states and the ability to express those inner feelings to others);
2. *Understanding Others Emotions*, 20 items (the ability to identify and understand the emotions of others and those that manifest in response to workplace environments, staff meetings, literature, artwork etc.);
3. *Emotions Direct Cognition*, 12 items (the extent to which emotions and emotional knowledge are incorporated in decision-making and problem solving);
4. *Emotional Management*, 12 items (the ability to manage both positive and negative emotions both within oneself and others);
5. *Emotional Control*, 9 items (the ability to effectively control strong emotional states experienced at work).

Cronbach's alpha is reported to range from 0.63 – 0.83 for the EI scales on the SUEIT (Palmer & Stough, 2001). The reliability coefficients (Cronbach's alpha) for this study are presented in Table 6. Reliability coefficients are all within an acceptable range (greater than .7) for the *Total EI* score and the subscales of the SUEIT.

5.2.2.2 The Occupational Roles Questionnaire

The Occupational Roles Questionnaire (ORQ) from the Occupational Stress Inventory – Revised Edition (Osipow, 1998), is a measure of occupational stress and is comprised of several work roles that have been associated with stress. The ORQ is measured on a five-

point Likert scale and takes approximately 15 minutes to complete. The ORQ consists of 60 questions and is broken up into six sub-scales, each with 10 items (definition):

1. *Role Overload* (extent to which job demands exceed resources and the extent to which the individual is able to accomplish workloads);
2. *Role Insufficiency* (extent to which the individual's training, education, skills, and experience are appropriate to job requirements);
3. *Role Ambiguity* (extent to which priorities, expectations, and evaluation criteria are clear to the individual);
4. *Role Boundary* (extent to which the individual is experiencing conflicting role demands and loyalties in the work setting);
5. *Responsibility* (extent to which the individual has, or feels, a great deal of responsibility for the performance and welfare of others on the job);
6. *Physical Environment* (extent to which the individual is exposed to high levels of environmental toxins or extreme physical conditions).

Whilst a summing of these six scales could produce a total ORQ score, Osipow (1998) states that it is not advisable to do so as the six individual scales allow for a more exact analysis of stress, therefore a total ORQ score will not be used in this thesis. Sound psychometric properties have been reported for the ORQ, with reliability coefficients ranging from .7 to .89 (Osipow, 1988). The reliability coefficients for this study are reported in Table 6 and were all around the acceptable criterion of .7.

5.2.2.3 The General Health Questionnaire-12

The General Health Questionnaire-12 (GHQ-12) focuses on psychological components of ill health (Goldberg & Williams, 1988). The GHQ-12 measures breaks in normal functioning, rather than life-long traits, and concerns itself with the inability to continue to carry out normal 'healthy' functions and the appearance of new phenomena of a distressing nature (Goldberg & Williams).

The GHQ-12 is comprised of 12 items and is a shortened version of the GHQ-60 (which has 60 items). The main difference between the GHQ-60 and the GHQ-12 is that all items pertaining to physical health were removed for the latter, thus the GHQ-12 is a measure of *Psychological Health* (or psychological well-being) only.

Responses are made on a four-point Likert scale indicating the frequency with which the respondent has experienced the symptom (for example; "Have you recently been able to concentrate on what you're doing?"). The scale takes less than 5 minutes to complete. The test authors report a spilt half reliability of the GHQ-12 of 0.83. The Cronbach's alpha for this study is presented in Table 6 and is within an acceptable range (greater than .7).

5.2.2.4 Physical Health Symptoms

A list of 11 *Physical Health* symptoms shown to be associated with stress taken from Winefield et al. (2002) was included to assess the physical health of employees. Respondents were required to indicate, on a 5-point Likert scale, how often they suffered from the *Physical Health* symptom (for example, headaches, muscle pain, skin problems). The reliability coefficient for this scale is not reported in Winefield et al. but was above the acceptable range of .7 in this study (see Table 6).

5.2.2.5 Job Satisfaction

The *Job Satisfaction* scale (Warr, Cook & Wall, 1979) assesses various aspects of one's job and how satisfied (or dissatisfied) one is with the external and internal features of their job. *External Job Satisfaction* focuses on aspects external to the position the individual holds, such as pay, security and management, whereas *Internal Job Satisfaction* focuses on aspects unique to that individual position, such as level of responsibility, chance of promotion, and amount of variety in job.

Both *External* and *Internal Job Satisfaction* are measured on a 7-point Likert scale. Eight items assess *External Job Satisfaction* and seven items measure *Internal Job Satisfaction*, with reliability coefficients reported from .74 to .85 for these scales. The reliability

coefficients for this study are reported in Table 6 and are within an acceptable range (above .7).

5.2.2.6 Organisational Commitment

The *Organisational Commitment* Questionnaire (OCQ; Mowday & Steers, 1979) is based on three aspects of commitment as defined by the test authors (example question): (1) strong belief and acceptance of the goals and values of the organisation ("I find that my values and the organisation's values are very similar"); (2) willingness to exert effort on behalf of the organisation ("I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful"); and (3) strong desire to maintain organisational membership ("I would accept almost any type of job assignment in order to keep working for this organisation").

The OCQ is measured on a 7-point Likert scale and is comprised of 15 items. A short version of the OCQ is available and is different in that it does not contain reverse scored items. The shorter version of the OCQ was employed in this study. The short OCQ has 9 questions and is scored on the same 7-point Likert scale, taking approximately 5 minutes to complete. The test authors report reliability coefficients for the short version ranging from .84 to .90. Similar reliability coefficients were found in the current study (refer to Table 6).

5.2.2.7 Work – Family Conflict

Work-Family Conflict was assessed using the 12-item scale (six items to assess work to family conflict and six items to assess family to work conflict) developed by Frone and Yardley (1996) by combining two scales used in previous research – the two-item scale developed by Frone, Russell and Cooper (1992) and the four-item scale used by Guteck, Searle and Klepa (1991).

This questionnaire assesses the extent to which work interferes with family life (amount of time devoted to work and work related demands, for example "After work I come home too tired to do some of the things I'd like to do"), and the extent to which family interferes with

work life (amount of time devoted to family and family related demands "My personal demands are so great that it takes away from my work").

The *Work-Family Conflict* questionnaire is measured on a 5-point Likert scale and takes approximately 5 minutes to complete. Frone and Yardley (1996) report a reliability coefficient of .87 for work family conflict, and .79 for family work conflict. The reliability coefficients for this study are reported in Table 6 and are above those found by Frone and Yardley and so are deemed acceptable.

5.2.2.8 NEO Five-Factor Inventory

Costa and McCrae's (1992) NEO Five-Factor Inventory (NEO-FFI) was selected as a measure of the personality factor *Neuroticism*. This scale consists of 12 items (measured on a 5-point Likert scale) and assesses the general tendency to experience negative affects such as sadness, fear, embarrassment, anger, guilt and disgust. Costa and McCrae report an internal reliability of .86 in the test manual. In this study the internal reliability was shown to be acceptable with a reliability coefficient of .89 (see Table 6).

Previous research suggests that individuals who have higher levels of negative affectivity may experience higher levels of stress (Watson et al., 1987; Brief, Burke, George, Robinson, & Webster 1988). This has led to the suggestion that negative affectivity should be statistically removed (partialled out) or controlled for in stress research. However, this perspective has recently been challenged by Spector et al. (2000) who suggest that negative affectivity should not be routinely controlled for. These authors recommend that negative affectivity should be measured, but not automatically partialled out of any statistical analysis. Negative affectivity is commonly measured by either tests of trait anxiety or by tests of trait neuroticism. I have used the latter approach in this thesis.

Table 6: Reliability Coefficients for the questionnaire package for Study 1

Scale	α	N
SUEIT		
Emotional Recognition and Expression	.81	320
Understanding Others Emotions	.88	320
Emotions Direct Cognition	.82	320
Emotional Management	.80	320
Emotional Control	.79	320
Total EI	.91	320
ORQ		
Role Overload	.80	320
Role Insufficiency	.84	320
Role Ambiguity	.76	320
Role Boundary	.67	320
Responsibility	.82	320
Physical Environment	.68	320
GHQ – 12	.85	319
Physical Health Symptoms	.81	320
Job Satisfaction		
External	.74	320
Internal	.88	320
Organisational Commitment (OCQ)	.90	317
Work – Family Conflict		
Work – Family Conflict	.90	317
Family – Work Conflict	.81	317
NEO – FFM		
Neuroticism	.89	319

Table 6 outlines the alpha reliability coefficients for each of the variables assessed in the questionnaire package. Each of the coefficients are within acceptable parameters.

5.3 Data Entry and Analysis

All data entry and analyses were conducted using SPSS version 12.0 (SPSS, 2003). Data from the 320 completed questionnaires were entered into SPSS and checked for entry errors. In assessing the normal distribution of the variables (examining the skewness statistic and the distribution of the normal curve) a number of variables were transformed in order to satisfy tests of normality. *Role Insufficiency, Role Ambiguity, Psychological* and *Physical Health* all underwent natural square root transformations, while *Role Boundary* and *Physical Environment* underwent logarithmic transformations. Finally, *Understanding Emotions* was transformed with a reverse square root transformation(refer to Appendix 2 for skewness and transformations). Although there is much controversy surrounding the transformation of data, the use of data transformation in this study can be justified due to the relatively large sample size (Osborne, 2002) and because there was no specific reason not to transform the data to satisfy tests of normality (as emphasised in Tabachnick and Fidell, 2000). All analyses hereon in will use the transformed variables. Descriptive statistics were then generated for each variable and were examined for outliers using the method recommended by Tabachnik and Fiddell (2001), whereby univariate outliers are characterized as cases with a *z* score over 3.29 ($p<.001$). Six cases were identified as univariate outliers, each of which were truncated rather than removed from the analysis (as suggested by Osborne & Overbay, 2004). Refer to Appendix 3 for a detailed description of the outliers. Using Mahalanobis distance no multivariate outliers were detected.

Once data had been checked for normality and outliers, the SPSS Missing Value Analysis (MVA) procedure was run to highlight patterns of missing values in the data. Examination of the univariate statistics table revealed that some respondents had missed demographic information (these patterns are described in the Section 5.1 of this thesis) but that generally no large amounts of missing data was found for any of the main variables in Study 1. Three employees missed the questions on *Organisational Commitment* and *Work-Family Conflict* and one missed the questions assessing *Psychological Health* and *Neuroticism*. Due to the small amount of missing data it was not considered necessary to remove these cases from the analyses.

5.3.1 Bivariate Analyses

To test for relationships between the main variables included in this study, Pearson product-moment correlation coefficients were computed using SPSS. For reasons of consistency, descriptions of correlations were based on the guidelines for conventional practice outlined by Cohen and Cohen (1983). According to these guidelines effect sizes for correlations are as follows: r = .10 (classified as weak), r = .30 (classified as moderate), and r > .50 (classified as strong).

5.3.2 Multivariate Analyses

Multiple regression analyses were used in Study 1 to investigate the interrelationship and predictive validity of study variables. Due to the exploratory nature of the study, standard multiple regression was first undertaken to assess the predictive validity of EI with respect to the stressors and strains assessed in this study. To assess the moderating effects of EI on the relationship between stressors and strains, moderated multiple regression analyses were undertaken, as recommended by Cohen and Cohen (1983). To examine interactions involving continuous variables, Aiken and West (1991) recommend centering all variables in moderated regression analyses in order to reduce problems of multicollinearity. In this Study 1, all variables included in the moderated regression analyses were first centered by converting them to z scores, and multiplicative terms were created for the standardised independent variables (Independent Variable x Moderator Variable).

To examine the incremental validity of EI once *Neuroticism* was controlled for, hierarchical regression analyses were employed. In hierarchical regression analyses the predictor (independent) variables are entered in steps (or blocks) with each of these variables being assessed in terms of what they add to the prediction of the dependent variable, after any other predictor variable has been controlled for.

CHAPTER 6:
STUDY 1: RESULTS

6.1 Objective 1: Exploration of the Relationship between Emotional Intelligence and Occupational Stressors

The current study sought to investigate whether the *Total EI* score and five EI dimensions (*Emotional Recognition and Expression, Understanding Emotions, Emotions Direct Cognition, Emotional Management* and *Emotional Control*) were related to the employee's subjective perception of occupational stress as defined by the ORQ (*Role Overload, Role Insufficiency, Role Ambiguity, Role Boundary, Responsibility* and *Physical Environment*). Zero order correlations and standard regression analyses were conducted in order to investigate these relationships.

6.1.2 Bivariate Analyses

Correlations were performed to determine whether a relationship existed between the *Total EI* score, the five EI dimensions and the six facets of occupational stress. Two-tailed tests were used in this and all subsequent analysis. The results are presented in Table 7.

Table 7: Correlations between Emotional Intelligence and Occupational Stress

	ERE	UE	EDC	EM	EC	Total EI
Role Overload	-.08	-.01	.14*	-.04	-.15**	-.03
Role Insufficiency	-.26**	-.17**	-.04	-.22**	-.22**	-.25**
Role Ambiguity	-.22**	-.30**	.01	-.35**	-.34**	-.34**
Role Boundary	-.18**	-.13*	.14*	-.16**	-.27**	-.16**
Responsibility	-.05	.04	.11*	.14*	-.06	.06
Physical Environment	-.10	-.08	-.03	-.07	-.08	-.10

N = 320; *p<.05; **p <.01. *Note*: ERE = Emotional Recognition and Expression; UE = Understanding Emotions; EDC = Emotions Direct Cognition; EM = Emotional Management; EC = Emotional Control.

Table 7 shows the correlations between EI and occupational stress. As shown in Table 7 the strongest relationship between EI and stress was between *Emotional Management* and *Role Ambiguity*. A similar relationship emerged between *Emotional Control* and *Role Ambiguity*. *Understanding Emotions* and *Emotional Recognition and Expression* also correlated with this dimension of stress. *Role Insufficiency* correlated negatively with all dimensions of EI except *Emotions Direct Cognition*. The variable *Role Boundary* correlated in a negative weak manner with all dimensions of EI (with the exception of *Emotions Direct Cognition* which revealed a positive correlation). *Physical Environment* did not correlate significantly with any of the EI abilities. In terms of the *Total EI* score, significant relationships were found with *Role Insufficiency, Role Ambiguity* and *Role Boundary*. Of these variables the strongest relationship was between *Total EI* and *Role Ambiguity*.

6.1.3 Multivariate Analyses

In order to explore which of the specific dimensions of EI were important as predictors of occupational stress, several standard regression analyses were undertaken with each of the six stress variables as the dependent variable, and each of the five EI dimensions as the independent variables. Note that only variables with significant correlations (see Table 7) were included in this analysis. The results of this analysis are presented in Table 8.

Table 8 (below) shows the five standard regression models with the stress facets as the dependent variables and the EI predictor variables. Collectively *Emotions Direct Cognition* and *Emotional Control* accounted for 3.6% of the variance in *Role Overload* (R^2 = .036). In the second regression model, *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* accounted for 10.1% of the variance in *Role Insufficiency* (R^2 = .101), however only *Emotional Recognition and Expression* and *Emotional Control* emerged as significant predictors. In the third model, *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* accounted for 16.6% of the variance in *Role Ambiguity* (R^2 = .166), however only *Understanding Emotions* and *Emotional Control* emerged as significant predictors. In the fourth model, all five of the EI dimensions accounted for 12.2% of the variance in *Role Boundary* (R^2 = .122), however only *Emotional Recognition and*

Expression, Emotions Direct Cognition and *Emotional Control* emerged as significant predictors. Finally, in the fifth regression model, *Emotions Direct Cognition* and *Emotional Management* accounted for only 2.8% of the variance in *Responsibility* (R^2 = .028), however only *Emotional Management* emerged as the significant predictor.

Table 8: Standard Regression Analyses showing each Dependent Stress Variable with the Emotional Intelligence Predictor Variables

Regression Model	Beta value (β)	Significance
1 Role Overload		
Emotions Direct Cognition	.125	.025
Emotional Control	-.131	.018
2 Role Insufficiency		
Emotional Recognition and Expression	-.235	. 001
Understanding Emotions	-.039	.575
Emotional Management	-.059	.475
Emotional Control	-.148	.037
3 Role Ambiguity		
Emotional Recognition and Expression	-.059	.340
Understanding Emotion	-.136	.045
Emotional Management	-.117	.124
Emotional Control	-.212	.002
4 Role Boundary		
Emotional Recognition and Expression	-.198	.002
Emotions Direct Cognition	.181	.003
Understanding Emotions	.032	.656
Emotional Management	.060	.451
Emotional Control	-.242	.001
5 Responsibility		
Emotions Direct Cognition	.093	.099
Emotional Management	.125	.027

N = 320

As shown in Table 8, *Emotional Control* emerged as a significant predictor for all regression models except *Responsibility* (refer to Table 8 for the Beta values). Within those models *Emotional Control* was the strongest predictor of *Role Overload, Role Ambiguity* and *Role Boundary*. *Emotional Recognition and Expression* was the stronger predictor of *Role Insufficiency* (β = -.235, p = .001) over *Emotional Control* (β = -.148, p<.05). *Emotional Management* emerged as the only predictor of *Responsibility* (β = .125, p<.05). These results suggest that *Emotional Control* is an important ability to have when trying to deal with occupational stress.

6.2 Objective 2: Exploration of the Relationship between Emotional Intelligence and Strain

The current study explored the relationship between the *Total EI* score, the five EI dimensions (*Emotional Recognition and Expression, Understanding Emotions, Emotions Direct Cognition, Emotional Management* and *Emotional Control*) and two measures of strain: *Psychological Health* and *Physical Health*. Zero order correlations and standard regression analyses were conducted in order to investigate these relationships.

6.2.1 Bivariate Analyses

Correlations were performed to determine whether a relationship existed between the *Total EI* score, the five EI dimensions and the two measures of employee health. These results are presented in Table 9.

Table 9: Correlations between Emotional Intelligence and Employee Health

	Psychological Health[a]	Physical Health[b]
Emotional Recognition & Expression	-.19**	-.12*
Understanding Emotions	-.17**	-.15**
Emotions Direct Cognition	.01	.05
Emotional Management	-.37**	-.28**
Emotional Control	-.38**	-.29**
Total EI	-.30**	-.21**

[a]N = 319; [b]N = 320; *p<.05; **p <.01.

Table 9 shows the correlations between the five EI dimensions and the two measures of employee health. As outlined in Table 9, *Emotional Management* and *Emotional Control* showed significant moderate relationships with both measures of employee health. Weaker, but still significant, relationships also emerged between *Emotional Recognition and Expression* and *Understanding Emotions* with both measures of employee health. No relationship between *Emotions Direct Cognition* and either measure of health was evident. In terms of the *Total EI* score and health, a moderate relationship emerged between *Total EI* and both measures of employee health, suggesting that higher scores on EI are related to a lower prevalence of ill health.

6.2.2 Multivariate Analyses

To explore which of the specific dimensions of EI were important in predicting employee health, standard regression analyses were undertaken with each of two measures of employee health (*Psychological Health* and *Physical Health*) as the dependent variable, and each of the five EI dimensions as the independent variables. Note that the EI dimension *Emotions Direct Cognition* was not included in this stage of analysis as it was not significantly related to either of the employee health variables (see Table 9). The results of these analyses are presented in Table 10.

Table 10: Standard Regression Analyses showing each Dependent Health Variable with the Emotional Intelligence Predictor Variables

Regression Model	Beta value (β)	Significance
1 Psychological Health[a]		
Emotional Recognition and Expression	-.112	.069
Understanding Emotions	-.079	.241
Emotional Management	-.210	.006
Emotional Control	-.245	. 001
2 Physical Health[b]		
Emotional Recognition and Expression	-.036	.573
Understanding Emotions	.001	.990
Emotional Management	-.141	.074
Emotional Control	-.188	.008

[a]N = 319; [b]N = 320

Table 10 shows the two standard regression models, with one of the employee health measures as the dependent variable and the significant EI predictors for each model. Collectively *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* accounted for 17.9% of the variance in *Psychological Health* (R^2 = .179), however only *Emotional Management* and *Emotional Control* emerged as significant predictors. In the second regression model, *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* accounted for 9.8% of the variance in *Physical Health* (R^2 = .098), however only *Emotional Control* emerged as a significant predictor.

As can be seen in Table 10, *Emotional Control* emerged as the strongest predictor of both *Psychological Health* and *Physical Health*. *Emotional Management* was also a significant predictor of *Psychological Health* (refer to Table 10 for Beta values). None of the other EI dimensions emerged as significant predictors in these models, suggesting that both *Emotional Management* and *Emotional Control* are the key EI dimensions in terms of predicting employee health.

6.3 Objective 3: Explore the Role of Emotional Intelligence as a Moderator in the Stressor-Strain Relationship

The current study sought to explore; 1) whether there is a relationship between stressors, as measured by the ORQ, and *Psychological Health*; 2) whether there is a relationship between stressors, as measured by the ORQ, and *Physical Health*; and 3) if a relationship does exists for 1) and 2), whether total EI moderates this relationship. Zero order correlations were conducted to assess the potential relationship between stressors and employee health. Moderated multiple regression analyses were undertaken, as recommended by Cohen and Cohen (1983), to explore the role of *Total EI* as a moderator in the stressor-strain relationship.

6.3.1 Bivariate Analyses

Correlations were performed to determine whether there was a relationship between the six facets of occupational stress, as measured by the ORQ, and *Psychological Health* and *Physical Health.* These results are presented in Table 11.

Table 11: Correlations between Occupational Stress and Employee Health

	Psychological Health[a]	Physical Health[b]
Role Overload	.21**	.26**
Role Insufficiency	.31**	.21**
Role Ambiguity	.35**	.24**
Role Boundary	.30**	.22**
Responsibility	.01	.12*
Physical Environment	.10	.23**

[a]N = 319; [b]N = 320; *p<.05; **p <.01.

Table 11 shows the correlations between the two measures of employee health and the six facets of occupational stress. As shown in Table 11, all facets of occupational stress significantly correlate with symptoms of *Physical Health*. *Role Overload, Role Insufficiency, Role Ambiguity* and *Role Boundary* each correlated significantly with

Psychological Health. Each of the correlations between the stress facets and the health variables are positive, suggesting that feelings of occupational stress are often accompanied by feelings of poor health.

6.3.2 Multivariate Analyses

As shown in Table 11 there is a significant relationship between most occupational stress facets and both *Psychological* and *Physical Health*. To further explore this result, a series of multiple regression analyses were conducted to assess whether the *Total EI* score would moderate the relationship between the six facets of occupational stress and the two measures of employee health.

In line with procedures outlined by Aiken and West (1991) each variable included in the regression analyses was firstly standardised and centred by conversion to *z* scores. Each of the six facets of occupational stress and the *Total EI* score, as well as the product term of these variables (*Total EI* x stress facet), was used to predict *Psychological Health* and *Physical Health*. The results of these analyses are presented in Table 12 (*Psychological Health*) and Table 13 (*Physical Health*).

Table 12: The Role of Total EI as a Moderator between Occupational Stress and Psychological Health (unstandardised *B*, standard error and standardised β shown)

Variable	*B*	Std. Error	β
Psychological Health			
Total EI	-.294	.052	-.300**
Role Overload	.203	.051	.207**
Total EI x Role Overload	.010	.048	.011
Total EI	-.226	.053	-.231**
Role Insufficiency	.253	.053	.258**
Total EI x Role Insufficiency	-.092	.054	-.090
Total EI	-.203	.054	-.207**
Role Ambiguity	.268	.054	.274**
Total EI x Role Ambiguity	-.017	.050	-.018
Total EI	-.258	.052	-.264**
Role Boundary	.257	.052	.259**
Total EI x Role Boundary	.004	.049	.004
Total EI	-.312	.054	-.319**
Responsibility	.121	.053	.123*
Total EI x Responsibility	.034	.048	.039
Total EI	-.290	.053	-.296**
Physical Environment	.072	.053	.074
Total EI x Physical Environment	-.011	.053	-.011

N = 319; *p<.05; **p <.01.

Table 13: The Role of Total EI as a Moderator between Occupational Stress and Physical Health (unstandardised *B*, standard error and standardised β shown)

Variable	*B*	Std. Error	β
Physical Health			
Total EI	-.200	.053	-.202**
Role Overload	.248	.053	.249**
Total EI x Role Overload	-.025	.050	-.027
Total EI	-.172	.056	-.173**
Role Insufficiency	.160	.056	.161**
Total EI x Role Insufficiency	.026	.057	.025
Total EI	-.154	.058	-.155**
Role Ambiguity	.185	.057	.186**
Total EI x Role Ambiguity	.038	.053	.040
Total EI	-.190	.054	-.191**
Role Boundary	.196	.055	.195**
Total EI x Role Boundary	.075	.052	.079
Total EI	-.219	.056	-.220**
Responsibility	.132	.055	.133*
Total EI x Responsibility	.003	.050	.004
Total EI	-.190	.054	-.191**
Physical Environment	.206	.054	.208**
Total EI x Physical Environment	-.020	.054	-.020

N = 320; *p<.05; **p <.01.

As can be seen in both Table 12 and Table 13, a main effect was observed between EI and both measures of employee health, for each of the six regression models. There were no significant interaction effects for *Total EI* and any of the six facets of occupational stress on the measures of employee health, suggesting that EI does not moderate the relationship between occupational stress and employee health.

6.4 Objective 4: Exploration of the Relationship between Stressors, Strains and Negative Affectivity

The current study explored whether there was a difference in the relationship between stressors and strains once NA (measured by *Neuroticism*) was controlled for.

6.4.1 Bivariate Analyses

Zero order correlations between stressors and strains were calculated, followed by partial correlations between stressors and strains, controlling for *Neuroticism*. These results are presented in Table 14 below.

Table 14 shows the zero order correlations between stressors and strains, as well as the partial correlations between stressors and strains once *Neuroticism* was controlled for. As can be seen in Table 14 there were some differences in significance between the zero order and partial correlations. This difference was greatest for *Role Insufficiency, Role Ambiguity and Role Boundary* and their relationship with *Physical Health.* In these relationships the zero order correlations suggested a significant relationship between the variables; however, once *Neuroticism* was controlled for, these relationships were no longer significant. This finding should be interpreted with caution as the zero order correlations in these relationships were not strong to begin with. For the rest of the partial correlations between the stressors and strains that remained significant, even after *Neuroticism* was controlled for, each of the correlations decreased in strength by approximately .10. As Spector et al. (2000) noted, large differences between zero-order and first-order partials may be consistent with the bias hypothesis of NA, however evidence of small changes in

correlations between zero order and partials does not justify concluding that NA is a proven bias in occupational stress research.

Table 14: Zero Order and Partial (controlling for Neuroticism) Correlations between Stressors and Employee Health

	Psychological Health[a]	Physical Health[b]
Role Overload		
Zero Order	.21**	.26**
Partial	.12**	.19**
Role Insufficiency		
Zero Order	.31**	.21**
Partial	.19**	.10
Role Ambiguity		
Zero Order	.35**	.24**
Partial	.16**	.07
Role Boundary		
Zero Order	.30**	.22**
Partial	.15**	.09
Responsibility		
Zero Order	.01	.12*
Partial	.09	.11*
Physical Environment		
Zero Order	.10	.23**
Partial	.02	.18**

[a]N = 315; [b]N = 316; *p<.05; **p <.01.

6.5 Objective 5: Exploration of the Role of Emotional Intelligence in Predicting Stressors and Strains once Negative Affectivity has been controlled

As shown in Table 7 and Table 9, significant relationships emerged between EI and stress and EI and health. Therefore, the current study further investigated these relationships by exploring the role of EI in predicting stressors and strains once NA was controlled for.

6.5.1 Multivariate Analyses

Significant relationships were found between the EI dimensions, stressors and strains (refer to Table 7 and Table 9). Therefore, a number of hierarchical regression analyses were undertaken to explore the degree to which the EI dimensions were able to predict stressors and strains, once *Neuroticism* had been controlled. For each regression analysis only those EI dimensions found to correlate significantly with stressors and strains were included. Two steps ("blocks") were utilised in the analyses, in Step 1 *Neuroticism* was entered into the regression equation and in Step 2 the relevant EI dimensions were entered into the regression equation. The facets of occupational stress (the stressors) and the two employee health measures were entered as the dependent variable. Table 15 (stressors) and Table 16 (strains) show the results of these analyses.

Table 15: Hierarchical Regression Analyses of Neuroticism and Emotional Intelligence on Stressors (standardised β weights and R^2 values shown)

	Role Overload		Role Insufficiency		Role Ambiguity		Role Boundary		Responsibility	
Variables Entered	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Neuroticism	.202**	.200**	.268**	.170*	.385**	.254**	.307**	.274**	.047	.207**
Emotional Recognition & Expression				-.213**		-.027		-.164*		
Understanding Emotions				-.015		.172*		.071		
Emotions Direct Cognition		.146**						.184**		.080
Emotional Management				.017		-.004		.181*		.255**
Emotional Control		-.014		-.096		-.135*		-.157*		
R^2	.041**	.063**	.072**	.117**	.148**	.202**	.094**	.163**	.002	.055**
Change in R^2		.022*		.045**		.054**		.069**		.052**

*p<.05; **p <.01.

As shown in Table 15 in almost all models *Neuroticism* was a significant predictor of stressors in Step 1. However upon adding EI in Step 2 of the regression models some additional variance was accounted for. In the first model *Neuroticism* explained 4.1% of the variance in *Role Overload*, R^2 = .041, $F_{inc}(1, 317) = 13.49$, $p<.001$). When the EI dimensions were entered into this model (*Emotions Direct Cognition* and *Emotional Control*) they explained an additional 2.2% of the variance in *Role Overload*, this change in R^2 was significant as was the overall model (R^2 = .063, F_{inc} (2, 315) = 3.69, $p<.05$). In Step 1 of the model examining *Role Insufficiency*, *Neuroticism* explained 7.2% of the variance in *Role Insufficiency* (R^2 = .072, F_{inc} (1, 317) = 24.56, $p<.001$). Once the EI dimensions were entered into this model in Step 2 (*Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*) they collectively accounted for an additional 4.5% of the variance in *Role Insufficiency* (R^2 = .117, F_{inc} (4, 313) = 3.96, $p<.01$). For the model examining *Role Ambiguity*, *Neuroticism* accounted for 14.8% of the variance in *Role Ambiguity* in Step 1 (R^2 = .148, F_{inc} (1, 317) = 55.01, $p<.001$). The EI dimensions *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* were entered into the model at Step 2 and collectively accounted for an additional 5.4% of the variance in *Role Ambiguity*, this increase in R^2 was significant (R^2 = .202, F_{inc} (4, 313) = 5.30, $p<.001$). In Step 1 of the model examining *Role Boundary*, *Neuroticism* explained 9.4% of the variance in *Role Boundary* (R^2 = .094, F_{inc} (1, 317) = 32.99, $p<.001$). Once all five of the EI dimensions were entered into this model in Step 2 (they collectively accounted for an additional 6.9% of the variance in *Role Boundary* (R^2 = .163, F_{inc} (5, 312) = 5.15, $p<.001$). Finally, for the model examining *Responsibility*, *Neuroticism* accounted for only .2% of the variance in *Responsibility* in Step 1, a contribution which was not significant (R^2 = .002, F_{inc} (1, 317) = .71, $p>.05$). The EI dimensions *Emotions Direct Cognition* and *Emotional Management* were entered into the model at Step 2 and collectively accounted for an additional 5.2% of the variance in *Responsibility*, this increase in R^2 was significant (R^2 = .055, F_{inc} (2, 315) = 8.71, $p<.001$).

In terms of the regression weights in Table 15 (the standardised β weights) in Step 2 when both *Neuroticism* and the EI dimensions were entered into the models there were differences in which variable was the strongest predictor of stressors. For *Role Overload,*

Role Ambiguity and *Role Boundary, Neuroticism* emerged as the strongest predictor, over the EI dimensions. However, for *Role Insufficiency* and *Responsibility*, *Emotional Recognition and Expression* and *Emotional Control* emerged as the strongest predictors (respectively) over *Neuroticism*.

Table 16: Hierarchical Regression Analyses of Neuroticism and Emotional Intelligence on Strains (standardised β weights and R^2 values shown)

	Psychological Health		Physical Health	
Variables Entered	Step 1	Step 2	Step 1	Step 2
Neuroticism	.591**	.562**	.460**	.462**
Emotional Recognition & Expression		-.042		.022
Understanding Emotions		.002		.067
Emotions Direct Cognition				
Emotional Management		.040		.064
Emotional Control		-.073		-.046
R^2	.350**	.354**	.212**	.216**
Change in R^2		.004		.004

*p<.05; **p <.01

As shown in Table 16 above, *Neuroticism* was a significant predictor of health strains in both Step 1 and Step 2 of these models, and in both health models was the only significant predictor in Step 2 with none of the EI dimensions being significant over *Neuroticism*. In the model examining *Psychological Health, Neuroticism* accounted for 35% of the variance in *Psychological Health* in Step 1 (R^2 = .350, F_{inc} (1, 316) = 169.92, p<.001). When the EI dimensions were added to the model in Step 2 they only accounted for an additional .4% of the variance in *Psychological Health*, an increase which was not significant (R^2 = .354, F_{inc} (4, 312) = .49, p>.05). In the model examining *Physical Health, Neuroticism* accounted for

21.2% of the variance in *Physical Health* in Step 1 (R^2 = .212, F_{inc} (1, 317) = 85.17, p<.001). When the EI dimensions were added to the model in Step 2 they only accounted for an additional .4% of the variance in *Physical Health*, an increase which was not significant (R^2 = .216, F_{inc} (4, 313) = .39, p>.05).

6.6 Hypothesis 1: Job Satisfaction

In the current study it was hypothesised that EI would be positively related to *Job Satisfaction*, such that high levels of EI would be associated with high levels of *Job Satisfaction*. This hypothesis was tested via bivariate analyses.

6.6.1 Bivariate Analyses

Correlations were performed to determine whether there was a relationship between the five EI dimensions as well as *Total EI*, and *Job Satisfaction. Job Satisfaction* is comprised of both *External Job Satisfaction* (aspects external to the position the individual holds) and *Internal Job Satisfaction* (aspects unique to that individual position). These results are presented in Table 17.

Table 17: Correlations between Emotional Intelligence and Job Satisfaction

	External Job Satisfaction	Internal Job Satisfaction
Emotional Recognition & Expression	.15**	.24**
Understanding Emotions	.10	.13*
Emotions Direct Cognition	-.13*	.01
Emotional Management	.18**	.21**
Emotional Control	.24**	.20**
Total EI	.14*	.22**

N = 320; *p<.05; **p <.01.

Table 17 presents the relationship between EI and *Job Satisfaction*. As expected there are a number of significant relationships. *Total EI* correlates significantly with both facets of *Job*

Satisfaction, suggesting that employees who report higher levels of *Total EI* also report higher levels of satisfaction. *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* all correlated positively with *External* and *Internal Job Satisfaction*, suggesting that employees who report using those EI dimensions in the workplace also reported feeling more satisfied with aspects of their job. Unexpectedly, *Emotions Direct Cognition* correlated negatively with *External Job Satisfaction*, suggesting that employees who reported not using emotions or emotional information to assist them in decision making tended to be more satisfied with the external aspects of their job. No relationships were found between *Understanding Emotions* and *External Job Satisfaction*, or *Emotions Direct Cognition* and *Internal Job Satisfaction*.

6.7 Hypothesis 2: Organisational Commitment

In the current study it was hypothesised that EI would be positively related to *Organisational Commitment*, such that high levels of EI would be associated with high levels of *Organisational Commitment*. This hypothesis was tested via bivariate analyses.

6.7.1 Bivariate Analyses

Correlations were performed to determine whether there was a relationship between EI and *Organisational Commitment*. These results are presented in Table 18.

Table 18: Correlations between Emotional Intelligence and Organisational Commitment

	Organisational Commitment
Emotional Recognition & Expression	.08
Understanding Emotions	.12*
Emotions Direct Cognition	-.05
Emotional Management	.22**
Emotional Control	.19**
Total EI	.15**

N = 317; *p<.05; **p <.01.

Table 18 shows the relationship between EI and *Organisational Commitment*. As expected there are a number of significant relationships between these variables. *Total EI* was significantly related to *Organisational Commitment*, suggesting that employees who report using EI in the workplace will also report feelings of commitment to their organisation. *Emotional Management, Emotional Control* and *Understanding Emotions* were the key dimensions of EI related to *Organisational Commitment*. Neither *Emotional Recognition and Expression* nor *Emotions Direct Cognition* was related to *Organisational Commitment*.

6.8 Hypothesis 3: Work-Family Conflict

In the current study it was hypothesised that EI would be negatively related to *Work-Family Conflict*, such that high levels of EI would be associated with low levels of *Work-Family Conflict*. This hypothesis was tested via bivariate analyses.

6.8.1 Bivariate Analyses

Correlations were performed to determine whether there was a relationship between the EI dimensions as well as *Total EI*, and *Work-Family Conflict*. This conflict has two directions: Work-Family Conflict and Family-Work Conflict. Work-Family Conflict assesses the extent to which work interferes with family life, whereas Family-Work Conflict assesses the extent to which family interferes with work life. These results are presented in Table 19.

Table 19: Correlations between Emotional Intelligence and Work-Family Conflict

	Work-Family Conflict	**Family-Work Conflict**
Emotional Recognition & Expression	-.11	-.06
Understanding Emotions	-.01	-.09
Emotions Direct Cognition	.13	.05
Emotional Management	-.08	-.11
Emotional Control	-.20**	-.18**
Total EI	-.06	-.11

N = 317; *p<.05; **p <.01.

Table 19 presents the relationship between EI and the two types of conflict. Unexpectedly, few relationships existed between these variables. The only significant relationships were between *Emotional Control* and both *Work-Family* and *Family-Work Conflict*. These relationships suggested that employees who reported being able to control strong emotional states experienced at work also reported less conflict between work to family life and family to work life. No other significant relationships emerged.

6.9 Hypothesis 4: Negative Affectivity

In the current study it was hypothesised that EI would be negatively related to *Neuroticism* (the measure of NA), such that high levels of EI would be associated with low levels of *Neuroticism*. This hypothesis was tested via bivariate analyses.

6.9.1 Bivariate Analyses

Correlations were performed to determine whether there was a relationship between the five EI dimensions as well as *Total EI*, and *Neuroticism*. These results are presented in Table 20.

Table 20: Correlations between Emotional Intelligence and Neuroticism

	Neuroticism
Emotional Recognition & Expression	-.27**
Understanding Emotions	-.25**
Emotions Direct Cognition	-.04
Emotional Management	-.61**
Emotional Control	-.57**
Total EI	-.47**

N = 319; *p<.05; **p <.01.

Table 20 shows the relationship between EI and *Neuroticism*. As expected there were a number of significant relationships between these variables. Each of the EI dimensions (with the exception of *Emotions Direct Cognition*) as well as *Total EI* correlated negatively

with *Neuroticism*, suggesting that employees who report having high levels of EI also tend to report having low levels of *Neuroticism*. Using the guidelines suggested by Cohen (1988) the relationships between *Emotional Recognition and Expression, Understanding Emotions* and *Total EI* with *Neuroticism* were small to medium in strength, whilst the relationship between *Emotional Management, Emotional Control* and *Neuroticism* were medium to large in strength. There was no relationship between the EI variable *Emotions Direct Cognition* and *Neuroticism*.

CHAPTER 7:
STUDY 1: DISCUSSION

7.1 Introduction

Occupational stress is an area of particular concern to Government bodies primarily due to the financial cost associated with employees experiencing stress (Comcare, 2003; Victorian WorkCover Authority, 2003). It is also concerning for individual organisations and the community as a whole due to the negative impact of stress in terms of well-being and relationships. Prevalence rates in the workforce are increasing rapidly and the impact of occupational stress can be devastating for the individual, their family and their organisation. The consequences of suffering occupational stress can be extreme in terms of psychological and physical health, job satisfaction, organisational commitment and conflict between work and family life (Burke, 2002; Evans & Steptoe, 2002; Ganster & Schaubroeck, 1991; Quick et al., 1992; Whitener, 2001). Whilst the process of occupational stress has been researched for decades, the important role of dealing with emotions effectively during this process is only just beginning to be recognised (Spector & Goh, 2001). Knowing that stress and emotions are intertwined constructs, where one cannot occur without the other (Lazarus, 1999), it is important to systematically study the relationship between occupational stress and how we deal with emotions, in order to understand whether the ability to effectively deal with emotions is related to the perception of stress and the negative outcomes of stress. Essentially, it is important to understand whether employees differing in their ability to manage their emotions in the workplace also differ in terms of the stress they perceive and the outcomes of stress. Emotional Intelligence is a relatively new construct in psychological research and provides an opportunity to systematically study the role of emotional management in the workplace. Utilising this construct may aid in the understanding of the role of dealing with emotions in the occupational stress process. Thus, the overall aim of Study 1 was to empirically examine the relationship between EI and occupational stress and the relationship between EI and outcomes of stress.

7.2 Evaluation of Study 1

The evaluation of Study 1 involved a general exploration of the relationship between EI dimensions and occupational stressors and strains in a large sample of working employees. This involved; 1) exploring the relationship between EI variables and occupational stressors; 2) exploring the relationship between EI variables and strain (measured as employee health); 3) exploring the role of EI as a moderator in the stress–strain relationship; 4) exploring the relationship between stressors, strains and NA; 5) exploring the role of EI in predicting stressors and strains once NA was controlled for; 6) examining the relationship between EI and *Job Satisfaction*; 7) examining the relationship between EI and *Organisational Commitment*; 8) examining the relationship between EI and *Work-Family Conflict*; and 9) examining the relationship between EI and NA. These factors were investigated because of the lack of literature comprehensively examining the role of EI in the occupational stress process. They were also investigated to identify whether EI could be useful to develop in employees in the workplace.

7.3 Exploration of the Relationship between Emotional Intelligence and Occupational Stressors

The relationship between EI and occupational stressors was initially explored so as to gain a systematic understanding of the way the EI dimensions (*Emotional Recognition and Expression, Understanding Emotions, Emotions Direct Cognition, Emotional Management, Emotional Control* and *Total EI*) and the six stressors (*Role Overload, Role Insufficiency, Role Ambiguity, Role Boundary, Responsibility* and *Physical Environment*) related to one another. Although previous literature has examined the relationship between EI and occupational stress (Ciarrochi et al., 2002; Salski & Cartwright, 2002), the current study differed to previous work in that it utilised a workplace specific measure of EI and investigated the relationships between these variables in a large group of employed workers.

7.3.1 Bivariate Analyses

A number of significant relationships emerged between EI and the occupational stressors. Four dimensions of EI, *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*, appear important in these relationships. *Emotional Management* measured the extent to which the employee was able to repair negative emotions and maintain beneficial positive emotions both within themself and others. This dimension correlated negatively with *Role Insufficiency, Role Ambiguity* and *Role Boundary* and positively with *Responsibility*. This suggests that those employees who are able to effectively manage both positive and negative emotions at work are more likely to know that they have the appropriate skills and training for the job (*Role Insufficiency*), be more likely to understand their job expectations and priorities (*Role Ambiguity*), be able to realise when they are experiencing conflicting role demands or loyalties in the workplace (*Role Boundary*), and be more likely to feel a sense of responsibility for the welfare and performance of colleagues. It may be through the ability to recognise emotion (*Emotional Recognition and Expression*) that these employees can use the experience of negative emotions as a warning that feelings of stress are increasing, and through being able to manage these negative emotions they are more able to deal with the stressor than if the negative emotions continued unchecked. Support for this proposition can be seen in the work of Lazarus (1999) who noted that certain emotions (anger, envy, jealousy, anxiety, fright, guilt, shame and sadness) could be called 'stress emotions' because they tend to arise from stressful situations. If an employee is able to recognise and manage these emotions as they occur, they may be more able to deal with the stressor that is causing them.

Emotional Control measures the ability of the employee to control strong emotional states experienced at work. This dimension correlated negatively with *Role Overload, Role Insufficiency, Role Ambiguity* and *Role Boundary*. This finding suggests that employees who believe they are able to effectively control strong emotions at work and not let those emotions affect the way they interact and perform at work would be less likely to have the demands of their job exceed their resources (*Role Overload*), more likely to realise that they have the right training, education and skills their job needs, more able to understand their job requirements and expectations, and would be less likely to experience conflicting

supervisory demands. As noted by Spector and Goh (2001) an employee who feels in control of a situation is likely to appraise it differently to an employee who lacks this feeling of control. Whilst Spector and Goh related this statement to the experience of occupational stress, it can be extrapolated to EI. An employee who feels emotionally in control of a situation which elicits a strong emotion (as most stressful situations tend to do) could be more likely to be able to manage that situation, than an employee who does not feel a sense of emotional control, and who therefore suffers less from the experience of occupational stress.

In contrast to the work of Ciarrochi et al. (2002) a significant relationship between emotional perception (termed *Emotional Recognition and Expression* in the SUEIT) and stress was found in this thesis. Ciarrochi et al. found no direct relationship between emotional perception and stress, suggesting instead that emotional perception may function more effectively as a moderator. In the current study *Emotional Recognition and Expression* was significantly related to a number of the stress variables, suggesting that having the ability to recognise how you are feeling and to express those feelings accurately may assist employees in being able to manage stress at work. For instance, a high score on *Role Ambiguity* indicates an employee who is unclear of what they are expected to do or how they should spend their time. An individual who is able to recognise feelings related to this scenario (such as worry, anger, frustration, or fear) could use these negative emotions as indicators of a problem in the environment and so take action to change these emotions (such as talking to their supervisor or going through their position description), thereby dealing with the stressor. A potential reason for the difference in the current results and the results of Ciarrochi et al. could be due to the difference in the way stress was measured and the different participant population. Ciarrochi et al. used a scale measuring life events to assess stress in a sample of university students, whereas this thesis has utilised a sample of employed professionals and a comprehensive measure of work stress (Osipow, 1998).

Collectively the findings in Study 1 of this thesis indicate that particular dimensions of EI (*Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*) are valuable competencies to have in dealing with occupational

stress (which is in line with the findings from Slaski and Cartwright, 2002). Spector and Goh (2001) emphasised that an emotional reaction will follow from a perceived stressor, and the results of the current study help extend this theory by providing evidence that those who are able to effectively recognise, understand, manage and control emotions in the workplace will, upon perceiving the stressor, be better able to manage emotional reactions and will therefore be more able to deal with the stressor itself than those who are less able to utilise these EI related variables.

Mayer and Salovey's (1997) four-branch model of EI is arranged hierarchically from the more basic psychological processes to higher, more psychologically integrated processes. Using this model they suggest that individuals develop EI in stages and that each of the EI dimensions are related to one another and must be developed before the individual can progress to the next stage/ability. A similar model of EI is proposed in the current thesis and the idea of progressing through stages of the model can be related to the occupational stress results found in Study 1. Four aspects of EI in Study 1 were significantly related to facets of occupational stress: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*. Similar to the suggestion by Mayer and Salovey, it is proposed that employees move through stages of using EI, however this can be extended by noting that there are two models here: one related to the employee themselves and one related to others in the work environment. In the first model the employees may use *Emotional Recognition and Expression* to identify the emotions they are experiencing and to determine whether or not to express those emotions, they then may use *Emotional Management* to regulate positive and negative emotions and to maintain an even disposition in the workplace, and finally if required, they may use *Emotional Control* to deal with strong emotions and to prevent these emotions from taking over their thoughts and behaviours. In the second model the employee may first *Understand the Emotions* of others in their work environment, they may then use *Emotional Management* to try and help regulate others' emotions and assist them in maintaining an even disposition at work.

7.3.2 Multivariate Analyses

Regression analyses were undertaken to further explore which of the specific dimensions of EI were important as predictors of occupational stress. Of the five regression models, the model investigating *Role Ambiguity* had the most variance explained by the EI dimensions. *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* collectively accounted for 16.6% of the variance in *Role Ambiguity*, although only *Understanding Emotions* and *Emotional Control* emerged as significant predictors. This suggests that employees who are more aware of the emotions of others in their workplace, who are more likely to pick up on the emotions of others and who are more able to control their own strong emotions from affecting the way they think and behave are less likely to have an unclear sense of what they are expected to do and how they should be spending their time. This ties into the earlier suggestion that an employee who feels in control of a situation is likely to appraise it differently to an employee who lacks this feeling of control (Spector & Goh, 2001). An employee who is able to control their own emotions and who has an awareness of what others are feeling are more likely to have a clear sense of what they need to do and of what others expect of them.

In the regression model examining *Role Boundary*, all five of the EI dimensions accounted for 12.2% of the variance, however only *Emotional Recognition and Expression, Emotions Direct Cognition* and *Emotional Control* emerged as significant predictors of *Role Boundary*. This finding suggests that employees who are able to recognise emotions they experience at work, who know when and how to express their emotions in the workplace, who tend to use cognitions to make decisions rather than rely only on emotional information and gut feelings, and who are able to control very strong emotions from affecting the way they behave in the workplace are less likely to feel caught between conflicting supervisory demands and are more likely to feel proud of what they do. Again this may be related to the idea that an employee who feels a sense of control about their emotions and the way they use their emotions may appraise a situation differently to an employee who does not have these same feelings of control. In this instance, this would mean that the employee who has a great sense of control in terms of emotion is more likely to express themselves and communicate in a way they are comfortable with, which would

lead to less confusion about supervisory roles and more pride in the way they conduct themselves.

A third regression model which explained a significant amount of variance in stress was the model examining *Role Insufficiency*. In this model *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control* accounted for 10.1% of the variance, however only *Emotional Recognition and Expression* and *Emotional Control* emerged as significant predictors. This finding suggests that employees who are able to recognise emotions they experience at work, who know when and how to express their emotions, and who are able to control strong emotions from affecting the way they behave are less likely to feel that the job they are performing and the skills they have are not matched and that their needs for recognition are not being met. Employees who have high levels of *Emotional Recognition and Expression* tend to be good at communicating how they are feeling and therefore are more likely to have others in their workplace understand their feelings in regards to the tasks they are doing and the achievements they are making. Secondly, employees who have a sense of control over their emotions may be more able to deal with issues related to skill-work fit and to any queries over recognition and therefore be less likely to have these issues persevere until they turn into feelings of stress.

In the other two regression models the EI dimensions accounted for only 3.6% of the variance in *Role Overload* (with *Emotions Direct Cognition* and *Emotional Control* as the significant predictors) and 2.8% of the variance in *Responsibility* (with only *Emotional Management* as a significant predictor). The findings from the first of these models suggests that employees who tend to use cognitive information rather than emotional information to solve problems and make decisions and who are able to control strong emotional states in the workplace are less likely to feel overwhelmed by work and will not tend to describe themselves as needing more help at work. Interestingly high scores on *Emotions Direct Cognition* are indicative of an employee who tends to use emotion and emotional information (often referred to as 'gut feelings') to assist in decision making and problem solving. In these analyses it appears that a low score on this dimension is related to

whether an employee will experience feelings of *Role Overload* (although it should be noted that this relationship was relatively weak in strength (Cohen, 1988)). Employees who tend to use emotional information to assist in decision making might be less confident of the decision they have made and feel overwhelmed by the outcome of their decision. Alternatively, using emotional information to make decisions may mean that the employee will take longer to make those decisions and therefore will be under an increasing workload pressure.

In the second of these two models, *Emotional Management* emerged as the only predictor of *Responsibility*. This result suggests that employees who feel able to manage their own positive and negative emotions and able to manage the emotions of others in their workplace are likely to feel a high level of responsibility for the performance of colleagues and tend to be sought out for leadership. Previous research has shown a strong link between *Emotional Management* and leadership (Gardner & Stough, 2001) which provides further support for the finding of *Emotional Management* as a predictor of *Responsibility*, as *Responsibility* measures, in part, the employee's perception that they are consistently sought out for leadership roles (Osipow, 1998).

7.4 Exploration of the Relationship between Emotional Intelligence and Strain

The relationship between EI and employee health was initially explored so as to gain an understanding of the way the EI dimensions and strain (measured as *Psychological Health* and *Physical Health*) related to one another.

7.4.1 Bivariate Analyses

A number of significant relationships emerged between the different EI dimensions and the employee health variables, with the exception of *Emotions Direct Cognition* which was not significantly related to either of the two health variables. Each of the other four EI dimensions, along with *Total EI*, was significantly related to both *Psychological Health* and *Physical Health*.

The relationship between EI and *Psychological Health* was such that employees who reported being able to recognise, understand, manage and control emotions in the workplace also reported less psychological ill-health symptoms (such as feeling unhappy, being unable to concentrate, feeling worthless). The same relationship emerged for *Physical Health* whereby employees who reported being able to recognise, understand, manage and control emotions reported less physical ill-health symptoms (such as headaches, muscle pain, skin problems). These results suggest that employees who report consciously using emotions at work (i.e. pay attention to their own emotions and the emotions of others in their workplace) are psychologically and physically in better health than employees who reported less use of or less attention to emotions at work. As noted by Spector and Goh (2001) employees who 'bottle up' or suppress emotions may create psychological and physical problems within themselves. The production of catecholamines and cortisol has been shown to increase in response to a situation that an individual finds distressing (producing negative emotions), a process which has been linked to heart disease (Frankenhaeuser & Lundberg, 1982). Furthermore, the experience of negative emotions in the workplace, if not managed adaptively by the individual, has been linked to heart disease (Greenglass, 1996) and to the suppression of the immune system (O'Leary, 1990). The continual experience of negative emotions in the workplace, if left unchecked, is likely to also play a large psychological role in that employees may begin to withdraw and change their attitudes about the organisation and its people (Spector & Goh).

The findings from these analyses were consistent with the results of Slaski and Cartwright (2002) and Tsaousis and Nikolaou (2005) but inconsistent with the results of Ciarrochi et al. (2002) and Donaldson-Feilder and Bond (2004). Slaski and Cartwright and Tsaousis and Nikolaou found a significant relationship between EI and health, whereas Ciarrochi et al. and Donaldson-Feilder and Bond reported no direct relationship between measures of EI and health. The main reason for the significant findings in this thesis between EI and health could be attributed to either the measures used or the type of individuals who participated in Study 1. In this study, the measure of EI was workplace specific (asking questions specifically related to the work environment), in comparison to Ciarrochi et al. and Donaldson-Feilder and Bond who each utilised general measures of EI. This suggests that it

may be that it is the manner with which employees are able to manage their emotions in the workplace that affects their health status, and not the manner with which they manage emotions out of the workplace. Secondly, the individuals who participated in this study were all currently employed, in contrast to Ciarrochi et al. whose participants were university students. The difference in sample employed in the current study compared to Ciarrochi et al. suggests that the relationship between EI and health may be different depending on employment status (i.e. employed versus student populations). Both of these suggestions present interesting opportunities for future research in the area of EI and health.

7.4.2 Multivariate Analyses

Regression analyses were undertaken to further explore which of the four dimensions of EI (*Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*) were important as predictors of the two measures of employee health. In the model predicting *Psychological Health* the four EI dimensions accounted for 17.9% of the variance, however only *Emotional Management* and *Emotional Control* emerged as significant predictors. This result suggests that employees who are able to effectively manage and control the emotions they experience at work, to the extent where these emotions do not have a negative impact on the way the employee behaves and interacts with colleagues, are less likely to suffer from mental ill health. In the model predicting *Physical Health* the four EI dimensions accounted for 9.8% of the variance, however only *Emotional Control* emerged as a significant predictor of *Physical Health*. This finding suggests that employees who are able to control strong emotions from affecting the way they interact, perform and behave are less likely to suffer from physical ill health.

Collectively these results indicate that the ability to manage and control emotions at work are key factors in maintaining mental and physical well being. This finding supports previous research examining the role of emotions in health and well-being. For instance, Salovey, Rothman, Detweiler and Steward (2000) discussed the importance of emotional states on physical health and suggested that positive emotional states may promote healthy perceptions, beliefs and physical well-being. Salovey, Bedell, Detweiler and Mayer (1999)

suggest that individuals who are able to regulate their own emotions are healthier than those who are not able to do so. In their recent empirical paper Tsaousis and Nikolaou (2005) report that control of emotions and use of emotions were significant predictors in their regression analysis of overall health. The findings of Tsaousis and Nikolaou are similar to those found in the current study which suggests that EI is a useful predictor of health in employees.

7.5 Exploration of the Role of Emotional Intelligence as a Moderator in the Stressor–Strain Relationship

The relationship between stressors and health strains was explored to evaluate their relationship with one another. Since a relationship was found between stressors and strains, further analyses explored the role of *Total EI* as a moderator of this relationship.

7.5.1 Bivariate Analyses

A number of significant relationships emerged between the six facets of occupational stress and the two health strains. Four facets of occupational stress were related to *Psychological Health* (*Role Overload, Role Insufficiency, Role Ambiguity,* and *Role Boundary*). All six of the facets of occupational stress were significantly related to *Physical Health*.

These findings are consistent with previous research. In a review of occupational stress, Downs et al. (1990) noted that stress has been related to the psychological areas of depression, fatigue, low self-esteem, anger, apathy, irritability, guilt, moodiness, boredom, accidents, withdrawal and burnout. In recent empirical work, Cooper et al. (1999) suggested that higher levels of occupational stress are related to higher levels of poor mental health, Leong et al. (1996) reported a significant relationship between occupational stress and mental ill-health and physical ill-health, and Burke (2002) who investigated the relationship between occupational stress and health in a sample of over 2,500 women and reported that women with more work stressors had higher levels of psychosomatic symptoms (stomach-aches, back problems, headaches) and more days of illness during the past year.

7.5.2 Multivariate Analyses

Moderated regression analyses were undertaken to explore whether *Total EI* would moderate the relationship between stressors and health strains. Slaski and Cartwright (2002) suggested that EI may play a role as a moderator in the stress process, a hypothesis which was empirically examined by Ciarrochi et al. (2002). Ciarrochi et al. reported that their objective measure of EI (emotional perception) successfully moderated the relationship between daily hassles and the three mental health variables (suicide ideation, depression and hopelessness), which these authors interpreted as meaning that emotionally perceptive people are *more* impacted by stress and will express higher levels of poor health (compared to people lower in emotional perception). In the same study, Ciarrochi et al. report that their subjective measure of EI (managing emotions) revealed that managing the emotions of others significantly moderated the relationship between daily hassles and mental health, which was explained as meaning that students high in managing others emotions responded *less* to stress with suicide ideation than individuals who were low in managing emotions of others.

In the current thesis there were no significant interaction effects for *Total EI* in any of the stressor–strain models, which suggests that in this group of employees EI did not moderate the relationship between occupational stress and health strains. A reason for this difference in findings, as compared to Ciarrochi et al. (2002), can be primarily attributed to large differences in methodology. These authors utilised a student sample and questioned them about daily hassles (such as troublesome neighbours, financial insecurity) and life experiences in order to assess their levels of stress. It would be unusual for these students (with an average age of 20 years) to have experienced a number of these hassles and life events, which would influence the findings of this study. The subjective measure of EI utilised by Ciarrochi et al. has been criticised by Petrides and Furnham (2000) as having "many psychometric problems" (p.317) and they "would caution further research with it" (p.318), suggesting that a different subjective measure of EI may produce different outcomes in relation to stress and health.

The finding in the current study that EI does not moderate the relationship between stressors and strains suggests that EI only has a direct effect on each of these variables (the stressors and the strains) and that EI does not change the relationship between stressors and strains. This means, regardless of the employee's level of EI, the relationship between occupational stress and health strains will always be negative, such that feelings of stress, if left unmanaged, are related to feelings of ill health. The role of EI in these relationships, as mentioned, is a direct one. In terms of occupational stress, EI may influence the way an employee feels upon perceiving stress. An employee who has a high level of EI will still perceive the stressor but will be more equip to deal with the emotional arousal that comes from the experience of stress. In terms of health, EI may influence the extent to which the employee is able to control their emotions to prevent symptoms of ill health. Spector and Goh (2001) have suggested that employees who 'bottle up' or who tend to suppress emotions may create psychological and physical problems within themselves. Utilisation of EI would prevent this bottling up or suppression of emotion and therefore would hinder the development of psychological or physical problems.

7.6 Exploration of the Relationship between Stressors, Strains and Negative Affectivity

The relationship between stressors and strains was examined again; however the influence of *Neuroticism* (the measure of NA) was controlled for to assess its impact on this relationship.

7.6.1 Bivariate Analyses

The significant relationships between facets of occupational stress (*Role Overload, Role Insufficiency, Role Ambiguity* and *Role Boundary*) and *Psychological Health* decreased in strength but were all still significant after *Neuroticism* was controlled for. *Physical Health* initially had significant relationships with all six facets of occupational stress, however, once *Neuroticism* was controlled for only three of these relationships remained significant (*Role Overload, Responsibility* and *Physical Environment*).

Watson et al. (1987) suggested that individuals high on NA would be more likely to report stress even in the absence of overt or objective stressors and that NA may therefore operate as a nuisance factor in self-report studies. This viewpoint was challenged by Spector and colleagues (2000) who assert that affective dispositions should not be routinely treated as bias factors and statistically controlled. Further, they suggest that to be considered a bias NA must distort the assessment of a construct and cannot be causally interlinked with the true underlying construct as either cause or effect. Due to this lack of clarity as to the role of NA in stress – strain research, Spector et al. claim that the use of partialling is a mistake.

> "If one is trying to determine if perceptions of job stressors relate to job strains, then why should NA be statistically controlled? Do we believe that high NA people lie about their perceptions, and they really don't see the job as stressful? Perhaps it is the low NA individuals who lie and don't want to admit anything negative? ...Certainly lying is possible, but NA is most likely not the reason for lying. Thus what are we actually doing by partialling?" (Spector et al. p. 81).

In self-report studies there is no easy statistical way out of this methodological problem, however, introducing a measure of NA and using the partialling method is a dangerous strategy (Spector et al., 2000). In the current thesis, whilst it was interesting to evaluate the role of NA in the stressor – strain relationship, based on the literature mentioned, these results need to be interpreted with caution. What is clear however is that there does exist a relationship between occupational stress and health strains, regardless of the purported role of NA in this process.

7.7 Exploration of the Role of Emotional Intelligence in Predicting Stressors and Strains once Negative Affectivity has been controlled for

Once a relationship had been established between EI, stressors and strains, the current thesis sought to explore the role of EI in predicting stressors and strains once NA had been controlled for. The role of NA in stress–strain research is unclear and often debated in the literature (see Section 7.6.1 of this thesis). The role of NA in EI research is relatively under

investigated, although many researchers suggest that EI measures tap into measures of personality and that there is considerable overlap between the two (see Chapter 3 of this thesis).

7.7.1 Multivariate Analyses

Hierarchical regression analyses were undertaken to explore the role of EI in predicting stressors and strains, once NA had been controlled for. As noted by Saklofske, et al. (2003) any correlation between EI and *Neuroticism* would not be surprising given that these traits are known to be associated with both positive and negative mood regulation, however if EI is no more than a repackage of personality then it is unlikely to be a useful tool in research and industry application. One way to test this repackage hypothesis is to evaluate the distinctness of EI by examining its incremental validity in the prediction of outcomes. In each of the six regression models predicting occupational stressors there were particular EI variables significant as predictors of stress, even after controlling for *Neuroticism*. These results suggest that EI has incremental validity above and beyond the personality measure of *Neuroticism* when it comes to predicting the experience of occupational stress.

For the two regression models predicting *Psychological* and *Physical Health* none of the EI dimensions were significant predictors of health after controlling for *Neuroticism*. This finding may be in part due to the suggestion, as proposed by Spector et al. (2000) that true variance shared may be unintentionally removed when NA is partialled. Alternatively the reason why the EI dimensions were no longer significant as predictors of health once *Neuroticism* was controlled for could be due to the similarity of the questions assessing health and NA. For instance, questions assessing the personality trait *Neuroticism* included: "I am seldom sad or depressed", "Sometimes I feel completely worthless" and "I often feel inferior to others". Questions assessing *Psychological Health* included: "Have you recently been feeling unhappy or depressed?", "Have you recently been thinking of yourself as a worthless person?" and "Have you recently been losing confidence in yourself?". The apparent similarity in these constructs could mean that the personality trait *Neuroticism* is highly predictive of ill health, over and above any other individual difference measures. However, this does not mean EI is completely redundant as a construct in terms of

employee health, rather it suggests that in this group of employees *Neuroticism* is a better predictor of health status, a finding that is not surprising given the large overlap in measurement of the two constructs. These results support the claim that NA is not simply a nuisance variable that must be partialled out of all research on individual differences. Spector et al. (2000) suggest that NA may help explain why two variables are related without being a bias to those variables; therefore EI still has a relationship with employee health; however this relationship must take into account the influence of *Neuroticism*.

7.8 Hypothesis 1: Job Satisfaction

It was hypothesised that EI would be positively related to *Job Satisfaction*, such that high levels of EI would be associated with high levels of *Job Satisfaction*. Two aspects of *Job Satisfaction* were included in this thesis: *External Job Satisfaction* (focuses on aspects external to the position the individual holds, such as pay, security and management) and *Internal Job Satisfaction* (focuses on aspects unique to that individual position, such as level of responsibility, chance of promotion, and amount of variety in job). The results of this study show weak to moderate correlations between the EI dimensions and the two measures of *Job Satisfaction*, findings which are consistent with previous research (Abraham, 2000; Carmeli, 2003).

External Job Satisfaction was positively related to the EI dimensions *Emotional Recognition and Expression, Emotional Management* and *Emotional Control*. This result suggests that employees who report being able to recognise emotions in themselves, who express emotions appropriately in the workplace, who are able to manage positive and negative emotions and who are able to control very strong emotions from affecting the way they interact and behave in the workplace also reported feeling satisfied with external aspects of their job – such as the position they hold, their level of job security and the way they feel about management in their organisation. Perhaps it is the components of EI related to emotional regulation and expression of appropriate emotions that contribute to effective social skills in the workplace (as suggested by Abraham, 2000) and increase effective communication such that if an employee were dissatisfied with an aspect of their job they

would have the skills necessary to rectify this dissatisfaction and promote greater satisfaction for themselves.

Unexpectedly *Emotions Direct Cognition* was negatively related to *External Job Satisfaction* such that employees who reported not using emotions or emotional information to assist them in decision making and problem solving also tended to report feeling more satisfied with external aspects of their job. It appears from these results that employees who rely more on cognitive or factual information to make decisions and solve problems also report feelings of *External Job Satisfaction*. This finding may be due in part to the fact that 51.4% of the employees who participated in Study 1 were managers or teachers and that for employees to be successful in these two occupations decisions may need to be made more on a factual or cognitive basis rather than relying solely on emotional information. Perhaps ideally, a balance between cognitive decision making and emotional decision making is more useful for these employees rather than being high in one or the other. This would suggest that a high score on this dimension is not necessarily always appropriate, however this suggestion would need to be explored further in future research.

Internal Job Satisfaction was positively related to the EI dimensions *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*. This result suggests that employees who are able to recognise their own and others emotions, who are able to express emotions accurately, who are able to manage emotions within themselves and others and who are able to control strong emotions experienced at work also report that they are satisfied with the internal features of their job – such as their level of responsibility within their organisation, their chances of promotion, and amount of variety in their job. Again, it might be that components of EI related to emotional regulation and management contribute to effective social skills (Abraham, 2000) and increase effective communication whereby if an employee were dissatisfied with their job they would have the skills necessary to alter this dissatisfaction and promote greater satisfaction within themselves. Interestingly being able to understand the emotions of others within the workplace and being able to manage the emotions of others were positively related to *Internal Job Satisfaction*. Taking the time to know how to understand

and manage others on an emotional level may contribute to feelings of belonging within an organisation and to feelings of closeness and trust with colleagues which may be why employees who score highly on these dimensions also score highly on measures of *Internal Job Satisfaction*.

7.9 Hypothesis 2: Organisational Commitment

It was hypothesised that EI would be positively related to *Organisational Commitment*, such that high levels of EI would be associated with high levels of *Organisational Commitment*. A number of significant relationships emerged between EI and *Organisational Commitment*, specifically with regards to the EI dimensions *Understanding Emotions, Emotional Management* and *Emotional Control*. This result suggests that employees who report being able to understand and manage the emotions of others in their workplace and who report being able to manage and control their own emotions at work also tend to report feelings of commitment and loyalty to their organisation. Carmeli (2003) found similar results and suggested that emotionally intelligent employees will have an emotional attachment to their organisation, making them more committed to their organisation. This suggestion explains why employees who are able to manage and control their own emotions at work may feel more committed to their organisation, but perhaps it is also because they have an emotional attachment to others within their workplace to the extent that they invest time in understanding and managing the emotions of their colleagues, that they report stronger feelings of commitment to the organisation.

7.10 Hypothesis 3: Work-Family Conflict

It was hypothesised that EI would be negatively related to *Work-Family Conflict*, such that high levels of EI would be associated with low levels of *Work-Family Conflict*. Two aspects of conflict were assessed in this thesis: *Work-Family Conflict* and *Family-Work Conflict*. *Work-Family Conflict* assessed the extent to which work interfered with family life (amount of time devoted to work and work related demands), whereas *Family-Work*

Conflict assessed the extent to which family interfered with work life (amount of time devoted to family and family related demands).

Contrary to expectations, only one EI variable was significantly related to both measures of conflict. *Emotional Control* showed weak to moderate negative correlations with *Work-Family* and *Family-Work Conflict*. This finding suggests that employees who report being able to control strong emotions from affecting the way they behave and perform in the workplace also tended to report less conflict from work life to family life and vice versa. Carmeli (2003) suggested that a high level of EI helps an employee balance family interference with work. He concludes his research by claiming that low emotionally intelligent managers are not sensitive enough to acknowledge how work is affected by family matters and therefore feel no need to alter their commitments. The findings of the current study are partially supportive of the work by Carmeli, however, in this study only one dimension of EI was related to conflict which is not sufficient to suggest that low EI means that the employee is not sensitive enough to detect conflict from work to family or vice versa. Perhaps it is the ability to be able to control strong emotions (such as frustration, anger and anxiety) that make the employee aware of negative emotions and the consequences if these emotions are not properly controlled, that is the key to dealing with *Work-Family* and *Family-Work Conflict*, rather than being high on every dimension of EI.

7.11 Hypothesis 4: Negative Affectivity

It was hypothesised that there would be a moderate negative correlation between EI and NA (as measured by *Neuroticism*), such that high levels of EI would be associated with low levels of *Neuroticism*. This hypothesis was supported with four of the EI dimensions (*Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*) as well as *Total EI* being significantly correlated with *Neuroticism*. Correlations ranged from small to large and were all negative in direction. The relationship between *Total EI* and *Neuroticism* was slightly stronger than had been reported in previous literature (Saklofski et al., 2003; Schulte et al., 2004) but was still low enough to suggest that EI is discriminant from measures of *Neuroticism*. Further, as evidenced in Section

6.5.1, the EI dimensions significantly predicted occupational stress even when *Neuroticism* was controlled for, demonstrating that the EI dimensions in the current thesis show some incremental validity above and beyond personality.

In this analysis the strongest correlation between EI and *Neuroticism* was for *Emotional Management*. Though being a relatively strong correlation (r = -.61, p<.01) this could be expected due to the fact that *Neuroticism* is known to be associated with both positive and negative mood regulation (Saklofske et al., 2003) and *Emotional Management* assesses the ability of the individual to regulate positive and negative moods in themselves and others. Although similar in definition the key is to establish the incremental validity afforded by EI over and above that of personality (Saklofske et al.), which has been shown in this thesis even with *Emotional Management* (refer to Chapter 6, Section 6.5, table 15). Although some significant relationships emerged between the dimensions of EI and *Neuroticism*, the existence of these relationships is not enough to suggest construct redundancy (as suggested by Gignac, 2004).

7.12 Limitations of Study 1

The most significant limitation of Study 1 was that the data for all variables included in this study were collected via participant self-report. Although self-reports of participants are common ways of collecting data in the social sciences (Kline, Sulsky & Rever-Moriyama, 2000), the use of such data collection as the only assessment of organisational behaviour is criticised for two major reasons: the inferences made by the researcher as to correlations and causal relationships between the variables under investigation might be artificially inflated by the problem of common method variance and secondly, studies involving self report data are prone to response biases which need to be acknowledged and understood when interpreting results (Donaldson & Grant-Vallone, 2002). One alternative to self-report measures is the use of 360-degree measures, whereby 'others' (for example: managers, colleagues and subordinates) rate the individual on the construct being assessed. These 'other' ratings are then compared to self ratings to evaluate congruency. Currently there

exists 360-degree measures of EI (Palmer & Stough, 2001; Bar-On, 1997), which provide an opportunity for researchers to reduce the bias of self-report for this construct.

Contamination through common method variance may have occurred in this study as a result of the fact that all measures were assessed using the same paper-and-pencil response format. The problem with common method variance in correlational investigations is that in addition to the relationship calculated by the correlation coefficient, some of this correlation coefficient may be measuring a false relationship, meaning that the correlation between variables is estimated as higher than is actually true due to the same response bias being applied by the participant to each measure in the questionnaire battery (Kline et al., 2000). Therefore it is possible that the relationships observed and reported in Study 1 have been slightly inflated due to common method variance. One way to control for this bias in future research would be to use different versions of the questionnaire battery, where the items are ordered differently, to detect order effects. Although this does not completely eradicate common method variance it would provide the researcher with an indication of its effect and possibly allow them to control for this bias.

The phenomenon of socially desirable responding is another concern in studies relying solely on self-report questionnaires. A social desirability bias occurs when respondents tend to over-report admirable attitudes and behaviours, presenting themselves favourably with respect to current social norms and standards, and under-report attitudes and behaviours that they feel are not socially acceptable or respected (Zerbe & Paulhus, 1987). In Study 1 neither the participant's colleagues nor supervisor had access to the data or to the EI feedback reports the participants were provided with, which meant that respondents had little to gain by adopting a socially desirable response bias. There are questionnaires to assess social desirability which could be incorporated into future research to assess the impact of this response bias in studies of EI and stress.

Although being limited in a number of ways, the results of Study 1 are valuable and provide an insight into the role of EI in the stressor–strain relationship that has been previously unexplored. The limitations presented in this study are common to most studies

examining individual differences, and whilst researchers need to be aware of them, their impact is not significant enough to discredit the findings of the current study. As emphasised by Spector (1994), despite the weakness of the design of cross-sectional self report methodology, it can be useful in providing a picture of how people feel about their jobs, and provide the researcher with inter-correlations among various feelings and perceptions. These two things provide important insights and can be useful for deriving hypotheses about how people react to jobs.

7.13 Conclusion

Study 1 of this thesis investigated the relationship between EI and occupational stress and the relationship between EI and outcomes of stress. These relationships were investigated due to the lack of literature comprehensively examining the role of EI in the occupational stress process, particularly literature including both stressors and strains in the investigation. They were also examined to identify whether aspects of EI would be useful to develop in employees.

Specifically, the current study involved 1) exploration of the relationship between EI and occupational stressors; 2) exploration of the relationship between EI and employee health; 3) exploration of the role of EI as a moderator in the stress–strain relationship; 4) exploration of the relationship between stressors, strains and NA; 5) exploration of the role of EI in predicting stressors and strains once NA was controlled for; 6) examination of the relationship between EI and *Job Satisfaction*; 7) examination of the relationship between EI and *Organisational Commitment*; 8) examination of the relationship between EI and *Work-Family Conflict*; and 9) examination of the relationship between EI and NA. A series of bivariate and multivariate analyses were undertaken at each stage in order to thoroughly assess the abovementioned objectives and hypotheses.

The results of Study 1 indicate that four EI dimensions are particularly important in the occupational stress process: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*. These results are in line with

previous research and suggest that employees who feel in control of their emotions in the workplace and who know how to deal with emotions appropriately and effectively are less likely to report feelings of stress. This may be because these employees are better equipped to handle the negative emotions that arise from stress and therefore they appraise stressors differently than those employees who are less able to handle these emotions.

The same four EI dimensions showed significant relationships with health strains (psychological and physical). Although previous literature shows conflicting results in studies examining these variables, the result here suggests that employees who are adept at using their emotions in the workplace in an appropriate and positive manner are less likely to suffer from ill health. It has been noted in the past that employees who suppress emotions may create more psychological and physical problems in themselves than employees who don't (Spector and Goh, 2001). Therefore employees who are able to manage their emotional experiences and who are able to express their emotions effectively tend not to suffer these ill health problems due to emotional suppression.

Although three independent relationships were found between EI and stressors, EI and strains, and stressors and strains, no moderating relationship was found. That is, EI did not moderate the relationship between stressors and strains. This finding suggests that EI only has a direct influence on these variables, rather than an influence on their relationship with one another. That is, the relationship between stressors and strains is independent of EI and that employees who feel stressed may also feel ill health, regardless of their EI. The role that EI plays in these relationships is direct, meaning that EI influences the way an employee appraises the stressor and the way an employee manages feelings of ill health. Employees who have a high level of EI may appraise a stressful situation differently to an employee with low levels of EI, and even if this appraisal does lead to feelings of stress and feelings of ill health, the employee with a higher level of EI may be more able to manage this ill health through utilising their ability to regulate negative emotions.

Once the relationships between EI, stressors and strains were evaluated, this thesis sought to explore the role of NA in each of these relationships. Negative affectivity has been

purported to bias most psychological studies, particularly those involving an examination into individual differences (Watson et al., 1987), however this viewpoint has been strongly challenged by Spector et al. (2000). Regardless of these different viewpoints, it is still important to examine the role of NA in areas where it has not been thoroughly explored. After accounting for the influence of *Neuroticism* there were still significant relationships between certain stressors and health strains and, as suggested by Spector and colleagues, changes of this small magnitude are not enough to suggest that NA is a source of bias in this relationship. Certainly *Neuroticism* plays a role in responses to self report questionnaires that measure individual differences, however this role is not enough to justify disregarding the relationship between the variables of interest. In exploring the predictive ability of EI once *Neuroticism* was controlled for there were some considerable changes in results. In each of the models examining stressors certain facets of EI remained significant predictors even after *Neuroticism* was controlled for, which suggests that EI has predictive validity beyond NA in terms of stressors. Conversely none of the EI dimensions were significant predictors of health strains once *Neuroticism* was controlled for. This finding could be due to the fact that the true variance shared between EI and health strains was unintentionally removed when NA was controlled for (Spector et al.) or due to the similarity of the questions assessing health strains and NA. The significant overlap in these questions would make NA strongly related to and highly predictive of health, over and above any other psychological construct. Therefore it cannot be concluded that EI is a redundant construct in terms of predicting health, but rather that one needs to be aware of the potential influence and overlap of *Neuroticism* in these relationships.

After the examination of EI in the stressor–strain relationship, an investigation into the relationship between EI and outcomes of stress was undertaken. Specifically the relationship between EI and *Job Satisfaction, Organisational Commitment* and *Work-Family Conflict* was investigated. Three hypotheses were outlined for these relationships and the results of Study 1 supported two of these completely and one partially. It was hypothesised that high levels of EI would be related to high levels of *Job Satisfaction*, a hypothesis which was supported. Two facets of *Job Satisfaction* were investigated (*External Job Satisfaction* and *Internal Job Satisfaction*) both of which were significantly

related to EI. Four of the EI dimensions were positively related to both facets of *Job Satisfaction*: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*. As suggested by Abraham (2000) it may be that the components of EI related to emotional regulation and management contribute a great deal to effective social skills and therefore EI increases the capacity of the employee to communicate effectively and to utilise their skills to alter dissatisfaction and promote satisfaction within the workplace.

The second hypothesis related to outcomes of stress was that high levels of EI would be related to high levels of *Organisational Commitment*. This hypothesis was also supported. Employees who reported being able to understand the emotions of others in the workplace and who were able to manage and control their emotions also reported stronger feelings of loyalty and commitment to their organisation than those employees who did not report having these EI competencies. Perhaps this is because employees who readily use emotions in the workplace have a stronger sense of emotional attachment to their workplace and the people in their workplace, and that it is this sense of attachment that makes them feel a strong sense of loyalty and commitment.

The final hypothesis related to outcomes of stress was that employees high in EI would also report experiencing less conflict between their work and family life. This hypothesis was partially supported as only the EI dimension *Emotional Control* was related to both *Work-Family Conflict* and *Family-Work Conflict*. This finding suggests that having the ability to control strong emotions from affecting the way the employee behaves and interacts is the key to managing conflict between the work and home life. Perhaps it is due to this conscious control of strong emotions that employees become aware of when a situation is getting out of hand (by eliciting in them feelings such as anger, hostility, frustration) and they use these feelings as a warning that they are over-immersed in work or family life and that greater balance is required. Therefore controlling emotions may act as a trigger for realising the extent to which the employee is over involved in a situation and allows them to deal with those feelings and re-establish balance between the work and family life.

Collectively the results of Study 1 provide a promising insight into the role of EI in the workplace and make a theoretical contribution as to the relationship between EI and the occupational stress process. Whilst the role of EI in leadership has been extensively studied, few researchers have investigated the role of EI in the domains included in this thesis. It is important to note that having a high level of EI does not eradicate feelings of occupational stress, as stressors are often external to the individual and generally individuals have little control over their occurrence. However, EI can help employees deal with occupational stress more effectively and prevent them from suffering the adverse health consequences that arise from occupational stress. Secondly, effectively handling of emotions in the workplace is important in terms of feelings of satisfaction and commitment and appears useful in balancing work and family life. If organisations can begin to foster and encourage the use of EI in the workplace then the potential to increase employee well-being may be increased.

Noted earlier in this chapter is the idea that employees move through stages of being able to use EI in the workplace. Two models of EI development were presented: one related to the employee themselves and the other related to dealing with the emotions of others in the workplace; the first model suggested that employees would use *Emotional Recognition and Expression* to identify the emotions they are experiencing and to determine whether or not to express those emotions, they would then use *Emotional Management* to regulate positive and negative emotions and to maintain an even disposition in the workplace, and finally if required, they would use *Emotional Control* to deal with strong emotions and to prevent these emotions from taking over their thoughts and behaviours. The second model suggested that the employee would first *Understand the Emotions* of others in their work environment and would then use *Emotional Management* to try and help regulate others' emotions and assist them in maintaining emotional well-being at work. Taken together these two models provide a preliminary framework of how to begin to develop EI dimensions in employees. Perhaps the next stage of research into EI and occupational stress is to teach employees about EI and how to use these variables effectively in the workplace through a series of training and development programs. This suggestion is undertaken in Study 2 of the current thesis, whereby a workplace EI training program will be developed,

implemented and evaluated. The following chapter provides an overview of the literature relating to EI development and how EI may be used as a tool in the workplace to assist employees in dealing with occupational stress. The implementation of the EI training program is presented in Chapter 9, followed by the evaluation of the program (Chapter 10). Finally, Chapter 11 discusses the outcomes and efficacy of the EI training program.

CHAPTER 8:
STUDY 2: THE EVALUATION OF AN EMOTIONAL INTELLIGENCE TRAINING PROGRAM

8.1 Introduction

Emotional Intelligence was originally conceptualised by Salovey and Mayer (1990; Mayer & Salovey, 1997). According to their model EI involves four main abilities: identifying emotions, using emotions, understanding emotions and managing emotions. The authors suggested that there are individual differences in EI relating to differences in our ability to appraise emotions, and that individuals higher in EI might be more open to internal experience and better able to label and communicate those experiences (Mayer & Salovey, 1993). Mayer and Salovey's (1997) model of EI is arranged hierarchically from the basic psychological processes to higher, more psychologically integrated processes. These authors have suggested that individuals develop EI in stages and that each of the EI abilities is related to one another and must be developed before the individual can progress to the next stage.

Since this first conceptualisation of EI, hundreds of academics, researchers and practitioners have sought to understand the relationship between EI and various life and work outcomes. The relationship between EI and aspects of employee behaviour has been of particular interest. For instance, Barling, Slater, and Kelloway (2000), Gardner and Stough (2002), and Palmer et al. (2001) have examined the role of EI and leadership in the workplace; Ciarrochi et al. (2002) and Slaski and Cartwright (2000) have explored the role of EI in stress; and Abraham (2000) and Carmeli (2002) examined the role of EI in job satisfaction and organisational commitment. Difficulties in the measurement of this construct have somewhat hindered research on EI and its application (see Chapter 3), however, enough advancement has been made to suggest that teaching employees how to use EI in the workplace would be an advantage to the individual employee and to the organisation as a whole. Study 1 of this thesis provided empirical evidence to suggest a

relationship between EI, stressors and strains. This chapter aims to define the dimensions of EI according to the model used in the current thesis (see Study 1) and provide an overview of the literature on developing EI in employees and concepts related to EI that concern the development of EI training programs. It is through linking these concepts related to EI to the development of an EI training program that this thesis makes a significant theoretical contribution to the areas of EI and employee training. Finally, this chapter aims to identify a target population for the implementation of an EI training program.

8.2 The Emotional Intelligence Dimensions

Training and developing EI in employees is difficult, primarily due to the lack of empirical research in this area. For a training program to be designed, an understanding of the EI dimensions is firstly required. The EI dimensions examined here are the same dimensions presented in Study 1 and include: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management,* and *Emotional Control*. A conceptualisation of each of these dimensions will be presented in turn in order to identify behaviours that underpin these constructs to target them for development.

8.2.1 Emotional Recognition and Expression

Processing emotional information begins with accurate emotional perception and recognition (Mayer, 2001). Being aware of one's own emotions involves accurately identifying the emotion being experienced, understanding how the emotion is related to one's goals and values, realising how the emotion is linked to thought and behaviour, and appreciating how the experience of emotion may affect accomplishments (Matthews et al., 2002). Part of this ability is said to be able to distinguish between accurate and inaccurate expression of emotion and honest and dishonest expression of emotion (Jordan & Troth, 2004). The ability to recognise one's own emotions is commonly considered to be one of the basic building blocks of EI in the occupational environment (Goleman, 1998; Matthews et al., 2002; Salovey et al., 2000). Employees high in this ability will be able to label feelings, understand the relations they represent, how their emotions blend together and the transitions of emotional experience (Mayer).

8.2.2 Understanding Emotions

Understanding the emotions of others can be difficult at times, particularly if the individual you are attempting to understand is not being very emotionally expressive. Understanding others' emotions is similar to Emotional Recognition and Expression except that it requires the individual to be aware of and distinguish between the emotions someone else is expressing. This EI ability taps into a previously mentioned construct – that of empathy. This facet of EI refers to being aware of others' feelings, needs, and concerns and implies taking an active interest in other individuals' concerns and feelings and being able to respond to unspoken as well as spoken feelings (Matthews et al., 2002). According to Goleman (1998) being able to understand others in the work environment includes being attentive to emotional cues from others, showing sensitivity and understanding of different perspectives people may have, and displaying helping behaviours based upon this understanding.

8.2.3 Emotions Direct Cognition

Emotions are not just a feeling that an individual has, they are also a source of information and can be used to assist in decision making; for instance mutual feelings of warmth and trust provide information about the level of friendship or affinity with another person (Palmer & Stough, 2001). Traditional models of decision making have often included the implicit assumption that all decision making processes are inherently rational (Ashkanasy & Hartel, 2002). Recent evidence from the field of neuropsychology supports the notion that emotions are able to assist decision making (Damasio, 1994; 1999). Damasio suggested that components of the limbic brain play a large role in decision making and that decisions are conditioned by somatic states which enable individuals to make value judgements. In terms of the organisational literature, Hay and Hartel (2000) have argued that emotions are a large component of leaders' decision making in certain situations. Similarly, Ashforth and Humphrey (1995) noted that managers themselves may be unaware of the role emotions play in making decisions and suggest that this might be because they are attempting to conform to social norms of rationality, however, regardless of this lack of awareness, Ashforth and Humphrey suggest that managers do use emotions when it comes to making decisions.

8.2.4 Emotional Management

Management of emotion begins with being open to emotions (Mayer, 2001). The regulation of emotion involves an individual's ability to connect or to disconnect from a particular emotion depending on its usefulness in the situation at hand (Jordan & Troth, 2004). Mayer and Salovey (1997) suggest that the management of emotions reflects the ability monitor the emotions of oneself and others and to manage those emotions by moderating negative emotion and enhancing pleasant emotion. Matthews et al. (2002) note that managing ones own emotions includes controlling and restraining impulses, dampening distress, effectively dealing with negative affect, and intentionally eliciting and sustaining pleasant (or unpleasant) emotions where appropriate. Matthews and colleagues further suggest that in the organisational environment, management of emotions also involves inhibiting personal needs, desires and emotions in place of organisational needs. Damasio (1994) implies in his work that emotions and emotional management may be critical to effective management in general.

In terms of managing the emotions of others, Mayer and Salovey (1997) suggest that this involves being able to realise how clear, typical, influential and reasonable the emotions of others are. They further suggest that to manage the emotions of others one needs to be able to moderate and enhance the appropriate emotions for the situation, still being aware of the information these emotions convey about the individual. Organisations are commonly viewed as integrated systems that depend upon the dynamic and complex pattern of interrelationships of the employees who comprise the organisation. The success of an organisation depends in part on the ability of employees to manage their own behaviour, but also on others being helped to do the same so that each individual can maximise their capabilities (Matthews et al., 2002). Matthews and colleagues suggest that there are two basic sub-skills to managing the emotions of another individual in the work environment: influence (building consensus and support and winning people over) and effective communication (dealing with difficult issues directly, listening well and sharing information).

8.2.5 Emotional Control

Having the ability to control strong emotions from affecting behaviour and the ability to work effectively can be difficult. Goleman (1998) suggests that this ability is largely invisible and that it manifests in the absence of more obvious emotional 'fireworks', such as being unfazed under strong threats of stress or handling a hostile person without lashing out at them or another individual in return. Matthews et al. (2002) note that individuals high in emotional control are able to keep disruptive emotions and impulses in check and therefore avoid being impaired cognitively or behaviourally by the negative consequences of these affects. Further, these individuals are claimed to be more likely to make personal sacrifices when organisational needs are present. Goleman advocates that this type of control is essential to maintain self regulation in order to meet ongoing work requirements and to resist seemingly urgent but actually trivial demands or the lure of time wasting distractions. Finally, as outlined by Matthews et al., control of emotions does not mean denying or repressing feelings. Negative emotions and bad moods can have important social functions, for example, anger can be a strong source of motivation, especially if it stems from the urge to right inequity or injustice.

8.2.6 Summary

This section has identified the key characteristics underlying the EI dimensions: *Emotional Recognition and Expression, Emotions Direct Cognition, Understanding Emotions, Emotional Management* and *Emotional Control*. The EI training program that is to be developed and evaluated in this thesis will attempt train employees in these dimensions of EI. The question of how these EI dimensions can be developed through a training program is examined in the next section of this chapter.

8.3 How can Emotional Intelligence be developed?

Many researchers who have investigated the efficacy of EI in the workplace have concluded that training and development programs aimed at teaching individuals how to utilise EI abilities is the next and most important phase of EI research. For instance, Bachman et al. (2000) investigated the role of EI in job performance and recommended that

developing essential emotional skills through training should be implemented in organisations. Schutte et al. (2001) and Schutte, Malouff, Simunek, McKenley and Hollander (2002) both suggest that it may be possible to increase EI through training which may in turn increase positive mood and self-esteem. Jordan, Ashkanasay, Hartel and Hooper (2002) examined workgroup EI and suggest that EI interventions could focus on low EI workgroups to maximise training benefits, and finally, Hunt and Evans (2004) investigated the role of EI in predicting traumatic stress and recommend that future research needs to identify whether EI can be changed through training programs.

Caruso and Wolfe (2001) have outlined a model for conducting EI training. The authors claim that their model provides employees with new insights into themselves and their work style and that by using the framework of the model, changes could be made in terms of employee behaviour and expectations. Caruso and Wolfe outlined 12 steps to proceed through when conducting a series of EI training workshops, beginning with outlining the goals of training and ending with follow-up support and reinforcement. Throughout their model they recommend interactive participation and that case examples used should tie into real-world experiences of the group. Although these authors do not provide any more detail in terms of how to run an EI training program, the outline of their model is a useful basis to begin designing and implementing a complete training program for employees.

In one of the only published papers to date developing and evaluating an EI training program in employees, Slaski and Cartwright (2003) report evidence to suggest that EI training improves employee health and well-being. In 2002 Slaski and Cartwright investigated the relationship between EI, stress and health in a group of employees. The authors stated that those employees who reported higher levels of EI also reported less psychological strain and lower levels of occupational stress in comparison to those who reported lower levels of EI. Building on this study a year later, Slaski and Cartwright hypothesised that EI training may be an effective technique for improving stress resilience. They theorised that through increased self-awareness an employee would be more able to detach themselves from events and be able to regulate their emotions to prevent them from becoming immersed in and carried away by their emotional responses at work. Sixty

employees completed the training program which ran for one day per week over a four week period. The majority of Slaski and Cartwright's development program focussed on developing self-awareness and detachment. Their participants were given techniques designed to assist them in learning to regulate their emotions, recognise emotions in others and understand the impact of their behaviour on the emotions of others.

Analyses carried out by Slaski and Cartwright (2003) of differences in scores before the program to after the program showed a significant increase in EI scores, a decrease in scores of poor mental health (signifying an increase in good mental health) and a decrease in feelings of occupational stress. These authors concluded that their results were encouraging as they showed that EI can be taught and learned and that it may be a useful ability to have in reducing stress and poor health in the workplace. Slaski and Cartwright's finding that developing self-awareness leads to increases in EI scores is useful for the development of the EI training program in the current study. It is therefore proposed that if the training program being developed in the current study incorporates exercises around self-awareness (such as learning to recognise emotions in oneself through the use of a daily emotion diary or through getting feedback from colleagues as to one's own emotional displays and then using this awareness to assist in the management and control of emotions) this might lead to the development of particular EI dimensions such as Emotional Recognition and Expression, Emotional Management and Emotional Control.

A limitation of the findings of Slaski and Cartwright is that, similar to their study in 2002, occupational stress was measured by employees being asked to indicate on a single item the extent to which they believed their life to be stressful at that point in time. As has been highlighted in Chapter 2 of this thesis, the construct of occupational stress is highly complex and to assess its existence using a single question may result in a loss of important information relevant to the construct and potentially distort its relationship with other variables. In terms of the EI training program implemented by Slaski and Cartwright, although they measured outcomes such as stress and health along with EI, they did not include these constructs in their program which limits its application. Although these authors did report significant decreases in perceived stress and ill health from before to

after the training program, one way to improve on this program could be to include discussions around the causes and consequences of stress, identifying stressors in the work environment and then focussing on the emotions that arise from these stressors and how to deal with them (tying together stress, health and EI).

The paper by Slaski and Cartwright (2003) provides the only insight into the effectiveness of EI training programs in the workplace thus far. It is therefore useful to look back in the literature at programs which have focussed on teaching individuals about emotions and how to learn or manage emotions effectively, in order to ascertain whether emotional behaviours can be learnt or controlled and which therefore may provide the foundation for the development of the EI training program in the current thesis. The next section of this chapter will discuss such literature.

8.4 Research Examining Teaching Awareness of Emotions and Emotional Behaviour

A lack of research in the area of EI training and development means that other evidence must be evaluated in an attempt to gauge the potential efficacy of EI training programs. Previous literature has examined the construct of empathy in relation to understanding the emotions of others and the area of anger and conflict management in relation to emotional management and emotional control. Further research has evaluated the possibility of being able to learn about our own emotions and the consequences of this learning. This section of this thesis will briefly examine some of the recent literature on empathy and anger management and will evaluate the hypothesis that we can learn about, manage and control our own emotions in an attempt to provide evidence for the claim that EI dimensions can be taught and learned. Linking these types of training programs (empathy, anger and conflict management) to the specific EI dimensions included in the current thesis (Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control) provides a justification for the use of specific exercises in the EI training program being developed and demonstrates the theoretical contribution of this thesis to the research area of EI.

The construct of empathy is central to most conceptualisations of EI and is particularly relevant for efficient analysis of the emotions of others (Matthews, Zeidner & Roberts, 2002). Empathy has been conceptualised as a behaviour, as a personality dimension, and as an experienced emotion (Reynolds, Scott & Jessiman, 1999). Lazarus (1999) considers empathetic emotions to include gratitude and compassion, and that empathy means being able to place ourselves in the shoes of a suffering person. Compassion refers to being in tune with another person's suffering or joy and is not about duplicating or mirroring the emotions the other person is feeling, but about understanding what the other person is going through and having feelings of wanting to help (Lazarus).

Shapiro, Morrison and Boker (2004) investigated the possibility of teaching empathy to first year medical students. They tested the hypothesis that reading and discussing literature about patients' experiences, with special emphasis on understanding and identifying with patients, would significantly improve medical student empathy. The students were required to attend small group discussion sessions (for a total of 8 sessions) and worked through readings of poetry, skits and short stories to understand and identify with patient's points of view, as well as those of the physicians, families and themselves. Shapiro et al. reports significant increases in empathy from before to after the training program and that the students had the potential to better understand their patients after completing the program. One aspect of this program that can be related to developing an understanding of the emotions of others (a dimension of EI) is the use of putting oneself in another person's shoes. Shapiro et al. instructed their students to place themselves in the shoes of a number of different people (patients, physicians, families and themselves), allowing them to evaluate the feelings and viewpoints of each of those individuals. Therefore an effective exercise in the current EI training program could be to have a set of scenarios in which groups must consider the emotions of different individuals, the motivations and desired outcomes of those individuals and how that may affect they way they are behaving in the workplace.

Flury and Ickes (2001) wrote a theoretical chapter on EI and empathetic accuracy. These authors described empathetic accuracy as being able to 'read' others' thoughts and feelings

on a moment-to-moment basis, and being able to infer the content of these thoughts and feelings. They suggest that an individual can become more empathetically accurate by getting to know the 'other' person better, by obtaining feedback about the 'other's' thoughts and feelings, by consciously paying close attention to behaviour during interactions and by attempting to maintain a shared cognitive focus. Similar to Shapiro et al. (2004) these authors suggest that evaluating the feelings and viewpoints of other individuals can be done through a shared cognitive focus, or through the individual being able to align their thoughts with the thoughts of another, and therefore being able to put themselves in someone else's shoes. Flury and Ickes also suggest that being able to read someone else's thoughts is a key facet of understanding someone else. In the EI training program being developed in the current thesis this hypothesis can be utilised by including exercises such as identification of emotion in facial expressions, tone of voice and body language to increase the EI dimension 'Understanding Emotions'.

The second area under investigation in this section is that of anger management, due to its focus on managing and controlling emotion. Anger has been argued to be dependent on the goal of preserving or enhancing social or self esteem and is primarily based upon harm to oneself and the assignment of blame (Lazarus, 1999). Common variations of anger have been identified in the literature, such as inhibited anger, righteous anger, pouting and hostility (see Lazarus). Howells et al. (2005) examined the efficacy of a brief anger management program with offenders. These authors note that anger management is one of the most common forms of rehabilitation offered to offenders and that management programs may work at reducing anger and anger-related problem behaviours. Their program ran for 10 sessions and included structured exercises focussing on skills such as identifying provocations, relaxation, cognitive restructuring, assertion and relapse prevention. Howells et al. report that the anger management program only had an effect on an 'educational' level such that the offenders became more aware of what anger was classified as, its effects and what would be required of them to change. The authors note that major limitations of their program were the lack of opportunity for offenders to 'practise' these new skills and the lack of motivation from many of the participants. Therefore, the finding that this program only had an effect on an educational level may be

attributed to the fact that the offenders had no opportunity to practise their skills. Consequently, in the development of the EI training program in the current thesis it is imperative to provide employees with additional exercises they can complete outside of the group sessions to give them the opportunity to practise their skills. Secondly, by incorporating exercises into the current EI training program such as identifying situations which are triggers to an emotional reaction (provocations, as suggested by Howells et al.) and how to manage those situations / reactions more effectively (relaxation and cognitive restructuring, as suggested by Howells et al.), it is anticipated that EI dimensions such as Emotional Recognition and Expression, Emotional Management and Emotional Control might be developed.

Rose and West (1999) also evaluated an anger management program but in a group of individuals with intellectual disabilities rather than offenders. The program consisted of 16 sessions and included a physical warm up and behavioural relaxation wind down exercises. A major part of the program included exercises in identifying emotions from pictures of faces, exercises in identifying emotions in general and reasons for feeling anger. Cognitive approaches such as improving self awareness through using self statements and thought stopping techniques were also employed in the program. The authors report that the program was successful in reducing feelings and expressions of anger (i.e. the participants were able to manage and control their feelings and expressions more effectively) and suggested that the key components of this behaviour change was emotional recognition, role play and relaxation techniques. The utilisation of exercises such as identification of emotion in facial expressions and using tone of voice and body language to develop individual's ability to understand the emotions of others was suggested by Flury and Ickes (2001) and has been supported empirically by Rose and West. In the EI training program being developed in the current thesis, to improve EI dimensions such as Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control, exercises around identifying and recognising emotions are important. It is therefore proposed that exercises which require participants to identify specific emotions in faces or movie clips could contribute to the development of Emotional Recognition and

Expression and Understanding Emotions and therefore influence the development of Emotional Management and Emotional Control as suggested by Rose and West.

Moving back to studies in the workplace, Lau, Li, Mak and Chung (2004) evaluated the effectiveness of conflict management training for traffic police officers in Hong Kong. These authors suggested that the involvement of officers in situations highly charged with emotions places them in delicate interactions with the public and that the negative emotions of officers', triggered by conflict interactions, compromised their work productivity and effectiveness. Lau and colleagues hypothesised that conflict management training could strengthen the officer's efficacy in handling conflict, improving their communication skills and in learning to regulate their emotions. The authors further hypothesised that better management of emotions could enhance the mental health and psychological well being of the officers. Three important factors which are each related to EI were highlighted in Lau et al.'s program: increasing self awareness of emotional reactions, strengthening communication skills and enhancing emotional regulation. By incorporating exercises in the EI based training program being developed in the current thesis around each of these three factors (as was done in Lau et al.'s conflict management program) it is anticipated that EI dimensions such as Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control may be enhanced. For instance, an exercise to increase one's self-awareness as to one's emotional reactions could be to provide participants with a number of scenarios and ask them to identify how they would react emotionally to those situations, thus developing their Emotional Recognition and Expression, and then ask them of alternative, more effective, ways to react to those situations – thus giving them strategies for dealing with their emotions and subsequently beginning to develop their Emotional Management and Emotional Control.

The conflict management program by Lau and colleagues (2004) consisted of a two day workshop which was attended by supervisors who were trained in conflict management and trained to run the course for their fellow employees. The program covered skills at the cognitive-behavioural level as well as the emotional level and included mini-lectures, sharing of individual experiences and group work via role playing. The authors report

increases in self awareness, improved communication skills and improvements in emotional regulation from before to after the program. The diverse format of the training workshops by Lau et al. is important in terms of maintaining interest and participation in the program. The development of the EI training program in the current thesis should be similar in that it should adopt a diverse range of training methods.

The ability to manage emotions in the workplace when there is conflict, change or decision making required, has been examined by a number of researchers, each of whom contributed to the book entitled "Managing emotions in the workplace" (Ashkanasy, Zerbe & Hartel, 2002). It would be redundant to review the entire book in this thesis, however Chapter 17 of the book provides an excellent overview of emotional management tools that emerge as a result of the various contributions to the book (Ashkanasay, Hartel & Zerbe, 2002). The authors of this book chapter aimed to extract a compendium of management tools which could be applied by practising managers, providing some guidelines as to how to develop the ability to manage emotions in the workplace. The notion that employees must manage affective events is presented by Ashkanasay, Hartel et al. as an emotional management tool. This notion suggests that employees must thoroughly analyse the situation that elicits emotion in order to gain an understanding of why the emotion was elicited and to be able to deal with that emotion and move on. A second tool presented is that of teaching employees to diagnose emotional displays. The authors suggest that employees should be taught the meaning of positive and negative emotional displays and taught about emotional control and how this influences emotional displays. Many of the other tools outlined in this book chapter conclude that EI programs, which teach employees how to better manage their emotions in the workplace, are necessary within organisations. Therefore, in the current study where an EI training program is to be developed, exercises around analysing situations that elicit emotion, identifying emotional displays in oneself and others and understanding positive and negative emotional displays area anticipated to lead to increases in EI dimensions such as Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control. For instance, providing participants with situations that elicit emotions (such as having a team member who does not contribute to the output of the team) and requiring them to answer what emotions this situation would

elicit (working on their self-awareness) should improve their ability to recognise their own emotions. Similarly, providing showing participants movie clips and asking them to identify the emotions expressed (both positive and negative) and to suggest alternative ways of reacting or behaving to the situation in the movie clip should contribute to the development of Understanding Emotion, Emotional Management and Emotional Control.

This section has attempted to link evidence on learning and changing emotions, reviewing empathy based training, anger management training and conflict management training, to the development of EI dimensions, and plays a part in the theoretical contribution of this thesis by linking the training tools from these types of training courses to the development of specific EI dimensions (Emotional Recognition and Expression, Understanding Emotions, Emotional Management and Emotional Control). By incorporating exercises drawn from empathy training programs, such as learning to put oneself in another's shoes in order to understand how they perceive and feel about a situation (Lazarus, 1999; Shapiro et al., 2004), learning to read another's thoughts through learning to identify the emotions expressed in faces, voices and body language (Flury & Ickes, 2001; Rose & West, 1999), it is anticipated that the EI dimensions of Emotional Recognition and Expression and Understanding Emotion might be improved upon. Secondly, by incorporating exercises drawn from anger management programs, such as learning to identify situations which arouse strong emotions in oneself and developing strategies to manage these emotions more effectively (Howells et al., 2005), practising ways to deal with negative emotions more effectively through role play (Rose & West), it is anticipated that the EI dimensions of Emotional Recognition and Expression, Emotional Management and Emotional Control might be improved upon. Finally, by incorporating exercises drawn from conflict management programs, such as identifying the emotions aroused by particular situations, identifying if there is a more effective way to react emotionally to this situation and then learning to rehearse a better reaction and implementing that in the future (Ashkanasay, Hartel et al., 2002; Lau et al., 2004), it is anticipated that the EI dimensions of Emotional Management and Emotional Control might be improved upon.

Although little empirical evidence exists to support the notion that EI can be taught and learned, there does exists a growing body of theoretical evidence to suggest that it is feasible to develop EI in employees. Drawing on research in the fields of anger management, empathy training and conflict management further strengthens the notion that behaviours underlying EI might be learned. The current study identifies aspects of these types of training programs, for instance, in examining empathy training Flury and Ickes (2001) suggested that being able to read someone else's thoughts is a key facet to understanding someone else. The link was then made incorporating this suggestion into the EI training program being developed in this thesis whereby exercises such as identification of emotion in facial expressions, tone of voice and body language could develop the EI dimensions Emotional Recognition and Expression and Understanding Emotions. These links contributed to the development of EI through an EI training program and are a significant part of the theoretical contribution of this thesis.

8.5 Emotional Intelligence as a Tool to Deal with Occupational Stress

Study 1 of this thesis explored the relationship between EI, occupational stressors and strains. A significant relationship was found between aspects of EI, stressors and strains, as well as between EI and outcomes of stress such as job satisfaction and organisational commitment. The second stage of research in this thesis is to explore the impact of an EI training program on employees' ability to effectively manage the consequences of stress (health strains and outcomes). Many stress management programs exist in the literature with varying degrees of focus and success. Cooper and Cartwright (1997) explored the three main options that researchers choose to target in stress management programs: primary, secondary or tertiary prevention. Primary prevention focuses on taking action to modify or eliminate sources of stress in the workplace and therefore reduce their negative impact on the individual. As highlighted by Cooper and Cartwright, primary intervention strategies are often used as a vehicle for cultural change and will generally require a stress audit or comprehensive risk assessment before they can be designed. Secondary prevention focuses on the detection and management of experienced stress by increasing awareness and improving the stress management skills of the individual employee through training

and educational activities. Secondary prevention takes into account the role of individual differences in perceiving and dealing with occupational stress and can focus on awareness activities such as skills training programs and relaxation training programs. Tertiary prevention focuses on the treatment, rehabilitation and recovery of employees who have suffered or are suffering from serious ill health as a result of occupational stress. Stress management interventions focused at the tertiary level will often involve the provision of counselling services, usually in the form of Employee Assistance Programs (EAP).

A number of researchers have evaluated the efficacy of training programs to reduce occupational stress (for example: Kagan, Kagan & Watson, 1995; Lindquist & Cooper, 1999; Rahe et al., 2002; Sharkey & Sharples, 2003). Kagen et al. investigated the effectiveness of psychoeducational programs in stress management. These authors proposed that a taxonomy of psychoeducational interventions would be of most benefit. This included improving the ability of the employee to control physiological reactions to stress through exercises such as progressive muscle relaxation, nutrition and exercise regimes, improving employees' capacity to deal with others in their work environment, and improving employees' interpersonal awareness through increased self understanding via insight therapy and elements of cognitive therapy. Kagan and colleagues report that psychoeducational training programs are effective for employees in a work environment considered to be highly stressful. The authors conclude that a combination of strategies (physiological exercises, employee management exercises and self-understanding exercises) is effective and that improving interpersonal awareness is the most effective strategy in the long term.

Similar to Kagen et al. (1995), Lindquist & Cooper (1999) have highlighted that the existing research on stress management advocates that a variety of methods be used in intervention strategies, with the most common types being a combination of relaxation techniques plus some form of cognitive skills training. These authors evaluated the efficacy of a lifestyle education program (consisting of workshops educating employees on dealing with stress and maintaining a healthy lifestyle) and report that their program had minimal benefit in the short term, but had greater potential to reduce stress in employees over the

long term. The notion that a combination of strategies is important in the implementation and outcome of employee training programs, as suggested by Lindquist and Cooper, is further supported through the conflict management program offered by Lau et al. (2004) who utilised a number of training strategies and techniques and who demonstrated positive changes in employees who participated in the program (see Section 8.4 for a detailed description of the program by Lau et al.). Therefore a similar process, utilising a combination of training techniques, will be adopted in the EI training program implemented in this thesis.

Rahe et al. (2002) also utilised a secondary prevention approach to stress management in a large group of employees and included a wellness seminar as well as small group stress educational sessions in their program. Rahe and colleagues evaluated the efficacy of their program in reducing ill health of employees and healthcare utilisation. The authors report that face-to-face intervention strategies are more effective than self-study strategies and that reported ill heath and number of doctor visits decreased from before to after the stress management program was completed. This finding provides support for the implementation of a face-to-face EI training program, rather that providing employees with materials to read through and self learn.

In an appraisal of stress management techniques, Nytro, Saksvik, Mikkelsen, Bohle and Quinlan (2000) examined a number of the key factors in the implementation of stress management interventions. They identified and analysed processes thought to be crucial to introducing occupational stress interventions and encouraging organisational change. Nytro et al. highlighted four major points in relation to this: there needs to exist or be created an organisational climate that learns from failure, stress management interventions need to provide for multi-level participation, attention needs to be paid to behaviours that may undermine the objectives of interventions, and roles and responsibilities before and during the intervention program need to be clearly outlined to employees. The authors note that there is no lack of advice in the literature for implementing and monitoring stress management programs but that these psychological social processes need to be considered before such programs can be effective.

The program to be evaluated in this thesis is different to some of the traditional programs of stress management in that this program will aim to equip employees with the skills necessary to deal with the emotions that arise from feelings of stress and to use these skills to prevent health strains and promote more positive feelings of satisfaction and commitment to the workplace. The notion that stress can be completely eradicated from an employee's working life by participation in a stress management program is somewhat unrealistic and does not reflect an understanding of real-world work environments. Stressors will always exist in some form in a work environment and completely eradicating them would be overly time consuming, expensive and might prove to be almost impossible. Therefore a different approach to dealing with stress from a secondary prevention perspective is presented in this thesis and it is my aim to target the emotions that arise in stressful situations and to examine the impact of being able to deal with these emotions more effectively on feelings of stress, health strains and behavioural outcomes.

8.6 An Understanding of Teacher's Stress

The question of who to trial an EI training program on was evaluated in preparing this thesis. The overwhelming literature on the prevalence of occupational stress and ill health as a consequence of stress in the occupation of teaching made it a stand out group for the implementation of a new type of stress management program.

The most frequently quoted definition of teacher stress which conceptualises teacher stress as negative and damaging to health is that proposed by Kyriacou and Sutcliffe (1978):

> "Teacher stress may be defined as a response syndrome of negative affect (such as anger or depression) by a teacher usually accompanied by potentially pathogenic physiological and biochemical changes (such as increased heart rate or release of andrenocorticotrophic hormones into the blood stream) resulting from aspects of the teacher's job and mediated by the perception that the demands made upon the teacher constitute a threat to his self-esteem or well-being" (p.2).

Teaching has been identified as a particularly stressful occupation with studies suggesting that teachers experience disproportionately high levels of stress in comparison to other occupations (see Burke & Greenglass, 1996). Across Australia the incidence of teacher stress is cause for serious concern, and whilst Education Departments are reluctant to provide statistics on this issue, there are some studies which provide insight to this problem. In 1987 Louden presented a summary of teacher stress at that time and in evaluating of over 2,000 teachers the author reported that between 10 – 20% of the teachers were experiencing some form of psychological distress, and a further 9% were experiencing severe psychological distress. Louden emphasised that these prevalence rates were much higher than reported for the general population. In an investigation into teacher workloads and occupational stress the Independent Education Union in Victoria and New South Wales (IEU, 1996) reported that teachers were experiencing stress from a range of areas, including difficulties with management in schools, increasing workload pressure, and poor staff – student relationships and that the impact of experiencing stress was manifesting in irritability at home (59%) and in the classroom (55%), anxiety (64%), and feelings of powerlessness (45%). The experience of psychological and physical health complaints were reported by over 18% of teachers surveyed. A second paper was released in 2002 by the Independent Education Union (IEU, 2002) which reported that 85.1% of Victorian and 91.9% of New South Wales (NSW) teachers had 'high' or 'moderate' levels of stress deriving from workload pressures and that 55.3% of full-time teachers in Victoria and 45.9% in NSW spent in excess of 41 hours per week in the workplace, plus at least 11 hours per week working at home.

In a national survey of occupational stress in universities, Winefield et al. (2002) reported that over 50% of the 8,732 university staff who participated in this study were at risk of psychological illness, compared with only 19% of the Australian population as a whole. Winefield and colleagues highlighted diminishing recourses, increased teaching loads and student-staff ratios, job insecurity, pressure to attract external funding, poor management and a lack of recognition as key contributors to occupational stress in universities. The high prevalence rate of occupational stress in teachers is not unique to Australia with similar research and findings being conducted in Britain, Canada, Finland, Israel, New Zealand,

Sweden, the USA and the West Indies (see Borg, 1990), providing evidence to suggest that training programs with the emphasis on dealing with the consequences of stress more effectively might be useful in the occupation of teaching in a number of different countries.

Three recent empirical studies provide further support for the implementation of a training program in teachers as each of these papers show strong relationships between aspects of stress and strains. In a study of almost 300 primary school teachers, Galloway, Panckhurst, Boswell, Boswell and Green (1984) examined mental health, stress and job satisfaction. Galloway and colleagues reported a general tendency for levels of high stress and low feelings of job satisfaction to be related to absences from work. The most highly rated source of stress in this study was reported as having problem children in the classroom, and the most highly rated source of job satisfaction ranked by the teachers in this study was their relationship with the pupils. Sheffield, Dobbie and Carroll (1994) evaluated stress, social support, and psychological and physical well-being in a sample of 88 secondary school teachers. These authors reported high levels of self reported job stress and that only 17% of teachers surveyed reported almost never experiencing work-related stress. The experience of stress was also related to poor psychological well-being and short term absences from work due to sickness, although there was no relationship reported between physical well-being and stress. In a larger study of occupational stress, mental health and job satisfaction of teachers, Travers and Cooper (1993) surveyed 1,790 teachers from a cross-section of school types and sectors. The results of their study indicated that teachers, when compared to a normative population and to other interactive occupational groups (such as nurses, doctors and dentists), exhibit greater levels of stress related health strains. Another major finding of this study was that a high proportion of the teachers surveyed were actively considering leaving the profession (66.4%) and that a large proportion were currently seeking alternative employment (27.6%) or premature retirement (13.3%). Travers and Cooper conclude that there are a number of approaches to stress management in teachers and that one is to help the individual teacher deal with the stress more effectively to minimise negative heath and behavioural outcomes.

Each of the three studies outlined above report high levels of stress in teachers and related this to poor health, lowered job satisfaction, higher rates of absenteeism and increases in the desire to leave the profession and seek alternative employment. These studies highlight the damage occupational stress causes primary and secondary school teachers and it is therefore imperative to try to assist these employees in dealing with the experience of stress more effectively, which will be attempted in this thesis through the implementation of an EI training program.

Previous research on teachers' occupational stress has been studied in both the primary and secondary eduction sector; however, a large body of research has recently begun to focus on stress in university staff as well. Gillespie, Walsh, Winefield, Dua and Stough (2001) examined staff perceptions of occupational stress in universities. These authors highlighted the fact that traditionally university teaching has been regarded as a low-stress occupation; however with the fall of salaries, the increase in the number of untenured positions and the increased workloads, this is no longer the case. A series of focus groups conducted in number of universities across Australia identified high levels of occupational stress in universities, with a significant proportion of staff reporting debilitating levels of stress. The university staff identified the consequences of stress as a decrease in the quality of education and research being produced. A similar study was undertaken within 14 universities in the United Kingdom (Tytherleigh, Webb, Cooper & Ricketts, 2001). In comparison to normative data, the university staff were highly stressed, particularly by work relationships, lack of control and resources, communication, work overload and pay and benefits, and they also tended to suffer more from psychological ill health.

As highlighted in this section, the teaching profession has been identified as a particularly stressful occupation, regardless of the level of teaching (primary, secondary or tertiary). Studies which have investigated the incidence of occupational stress find higher prevalence rates among this profession in comparison to a normative population. Research also suggests that poor health and decreased job satisfaction are consistent outcomes of stress for teachers. Based upon the literature and statistics reported in this section, Study 2 of this thesis will utilise a teaching population to trial a new kind of stress management program in

order to evaluate its efficacy in a population known to be at risk of occupational stress and the adverse consequences of stress.

8.7 Objectives and Hypothesis for Study 2

The existence of a relationship between EI, stressors and strains has been presented in Study 1. Study 2 of this thesis aims to expand on this evidence, examine the efficacy of an EI training program in a group of employees and plays a significant part in the theoretical contribution of this thesis to question of whether EI dimensions can be developed in workplace training programs. The current chapter has examined the high prevalence rates of stress in the occupation of teaching and Study 2 further aims to utilise this occupation group in examining the EI training program and evaluating the effects of this program on stressors, strains and outcomes of stress. The specific objectives and hypotheses for the evaluation of Study 2 are outlined below.

8.7.1 General Exploration of Emotional Intelligence, Stress and Strain in Teachers

A series of general objectives were formulated to explore the relationship between EI, occupational stress, strain (employee health) and outcomes of stress in teachers. There was not enough literature in this area to construct specific hypotheses.

8.7.1.1 Objective 1: Exploration of the Relationship between the major Variables and Demographic Characteristics

Are the major variables of Study 2 (EI, Occupational Stress, Strain and Outcomes of Stress) related to: 1) age; 2) gender; 3) number of days absent in the previous six months due to illness; 4) average number of hours worked per day; and 5) the length of time the teacher has been employed at their current school?

8.7.1.2 Objective 2: Exploration of the Levels of Emotional Intelligence and Occupational Stress in Different Types of Teachers

Are the dimensions of EI and the facets of stress different for primary, secondary and tertiary education teachers at each testing phase?

8.7.1.3 Objective 3: Exploration of Employee Strain and Outcomes of Stress in Different Types of Teachers

Is the amount of strain experienced (*Psychological* and *Physical Health*) different for primary, secondary and tertiary education teachers? Are the outcomes of stress (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*) different for primary, secondary and tertiary education teachers at each testing phase?

8.7.2 Evaluation of the Emotional Intelligence Training Program

8.7.2.1 Hypothesis 1: Emotional Intelligence

It is hypothesised that the level of EI will increase following participation in the EI training program.

8.7.2.2 Hypothesis 2: Occupational Stress

It is hypothesised that the perceived level of *Occupational Stress* will decrease following participation in the EI training program.

8.7.2.3 Hypothesis 3: Employee Strain

It is hypothesised that the level of *Psychological* and *Physical Health* will decrease following participation in the EI training program.

8.7.2.4 Objective 4: Exploration of Changes in Outcomes of Stress

Is there a change in levels of *Job Satisfaction, Organisational Commitment* or *Work-Family Conflict* from before the training program to after the training program?

8.7.2.5 Objective 5: Exploration of the Relationship Between Changes in EI and Changes in Occupational Stress, Strain and Outcomes of Stress

Are the changes in EI (from pre- to post-program) related to the changes in Occupational Stress, Employee Strain and Outcomes of Stress (from pre- to post-program)?

8.8 Conclusion

The preceding chapters of this thesis have provided an overview of the role of emotion in occupational stress. Study 1 evaluated the relationship between EI, stressors and strains and found evidence of the existence of relationships between these variables. To expand on these findings the current chapter discussed the theoretical underpinning of the development of an EI training program. It outlined previously evaluated programs that have focussed on learning about, changing and developing emotions and detailed important dimensions of EI relevant to the workplace that can be used as outcome measures in the evaluation process. This chapter also discussed the twofold use of an EI training program: to develop EI in employees and to use EI as a tool to deal with occupational stress. The existence of high levels of occupational stress in the teaching profession is irrefutable and structured programs that train teachers on the causes and consequences of stress, as well as how to deal with the emotions that arise from stress are lacking. The current study draws from literature in the areas of empathy, anger and conflict management training to identify specific training techniques which influence the learning or development of emotions and emotion-related behaviours in order to extract these exercises for the development of the EI training program. It is the linking of these types of training programs to the development of EI dimensions (anger management, empathy training, conflict management and stress management) that highlights the theoretical contribution of this thesis. This chapter also examined literature in the area of stress management to maintain the focus of the program on emotions experienced in times of stress. Finally, this chapter outlined the objectives and hypotheses for Study 2, each of which are to evaluate the effectiveness of the EI training program developed in this thesis.

The following chapter of this thesis (Chapter 9) presents the methodology of the development and implementation of the EI training program. Chapter 9 also highlights the processes to be undertaken in evaluating the program. Chapter 10 presents the evaluation of the program, followed by a discussion of this evaluation (Chapter 11) and conclusions as to the efficacy of the EI training program.

CHAPTER 9:
STUDY 2: METHODOLOGY

9.1 Method A: Development of the EI Training Program

Study 2 involved the development of an EI training program as well as the formulation of trainer and participant manuals. This process involved a number of systematic stages that are outlined below.

9.1.1 Review of the Literature

The first stage in the development of the EI training program was a review of the relevant literature. Firstly an evaluation of the causes and consequences of stress and the link to emotion and EI was given in Chapters 2 and 3 of this thesis. Study 1 (which encompassed Chapters 4 through 7) detailed an empirical investigation into the relationship between EI, stressors and strains. The outcome of Study 1 was the justification for the development of an EI training program to teach employees about EI and stress and how to better deal with the emotions that arise as a consequence of stress.

Given the relative absence of workplace EI training programs, an examination into the literature which has encompassed emotional learning and development (such as empathy training, anger and conflict management) was undertaken. This literature was explored in terms of techniques (for example, individual or group sessions, mini-lectures, role play), the strategies used (for example, targeting emotional behaviours, targeting self and other awareness, targeting stress identification, targeting relaxation techniques) and the outcomes reported (for example, the empathy training program discussed by Flury and Ickes (2001) suggested that being able to read someone else's thoughts is important in being able to understanding someone else.). A link was then made to how these training programs could be extrapolated to the development of EI in the workplace (refer to Table 21 below). For instance, in the anger management training programs (Howells et al., 2005; Rose & West, 1999) it was reported that exercises around identifying emotions from pictures of faces,

exercises in identifying emotions in general and reasons for feeling anger reduced feelings and expressions of anger and therefore the hypothesis in the current thesis is that incorporating these types of exercises in an EI training program could improve specific EI dimensions (such as Emotional Recognition and Expression, Emotional Management and Emotional Control). Exercises of this type were then selected to be included in the current training program with the hypothesis that they would develop dimensions of EI (Table 21 presented below outlines the exercises incorporated in the EI training program). Linking these types of training programs to the development of an EI training program is a significant part of the theoretical contribution of this thesis (refer to Section 8.4 for detail on the link between these training programs and the development of the EI training program). Finally, it was identified that no program existed that incorporated traditional aspects of stress management (such as learning how to identify stressors and learning to use relaxation techniques to deal with stressors) with learning how to deal with emotional reactions effectively (refer to Section 8.5).

The specific design elements derived from a review of the literature (presented in Chapter 8) that were included in the EI training program are as follows: a psychoeducational training approach to stress and EI; face-to-face training group rather than individual training sessions; skills training in the form of group interaction and shared experiences; and provision of exercises to complete outside the sessions to enable practice of learnt skills. It was decided that the EI training program would be limited to five sessions (each of 2 hours duration) to fit in with the constraints of the participants and the timeline of this thesis. This could be a potential limitation of this program as there is a large amount of material for participants to learn and absorb in a relatively short period of time.

Table 21: Exercises included in the Emotional Intelligence training program.

Exercise to be included in training program	Impacts which EI dimension?	Method of development	References
Keep an emotional diary to document how you react to particular situations throughout the working day	ERE	Increases self-awareness	Slaski and Cartwright (2003)
Identify in given scenarios what triggers an emotional reaction in oneself	ERE	Increases self-awareness	Ashkanasay, Hartel et al. (2002) Howells et al. (2005)
Identify the emotions expressed in faces (non-verbal signals) and in movie clips (using verbal and non-verbal signals)	ERE UE	Increases self-awareness Increases empathetic accuracy Strengthens communication skills through learning to understand others verbally and non-verbally	Ashkanasay, Hartel et al. (2002) Flury and Ickes (2001) Rose and West (1999)
Attempt to put oneself in another's shoes by reading a given scenario and then noting down the emotional reaction to this scenario from different viewpoints	UE	Increases empathetic behaviour Develops the awareness of others viewpoints	Lau et al. (2004) Shapiro et al. (2004)
Learning to ask for feedback from colleagues (as to emotional displays) more often (through role play) and then using this feedback to understand oneself and modify one's emotional displays or behaviour if required	EM EC	Increases self-awareness Improves communication skills	Slaski and Cartwright (2003)
After learning to identify emotional triggers (see above), suggest alternative ways to respond to the given situations and identify the impact of these responses on one's own thoughts and behaviours and the impact on others in the workplace	ERE UE EM EC	Increases self-awareness Improves communication skills Improves ability to analyse impact of one's behaviour on others Enhances emotional regulation	Howells et al. (2005) Lau et al. (2004)

Note: ERE = Emotional Recognition and Expression; UE = Understanding Emotion; EM = Emotional Management; EC = Emotional Control

9.1.2 Identification of how to structure the Five Emotional Intelligence Training Program Sessions

The next stage in the development of the EI training program was the identification of how to structure and present the program to employees. It was decided that the first session

should present an overview of the aims and responsibilities of employees taking part in the program (as suggested by Nytro et al., 2000), followed by an introduction into the causes and consequences of stress in the workplace. Mayer and Salovey (1997) proposed that EI is developed in stages, from more basic psychological processes to higher, more psychologically integrated processes. These authors suggested that each of the EI dimensions are related to one another and must be developed before the individual can progress to the next stage. Adopting this procedure, each of the four dimensions of EI will be developed in a similar order as outlined by Mayer and Salovey. Therefore the second session of the training program would introduce EI and begin to target the behaviours underpinning the first dimension of EI: *Emotional Recognition and Expression*. The third session would focus on the second dimension of EI: *Understanding Emotions*, and the fourth session on the last two dimensions of EI: *Emotional Management* and *Emotional Control*. Refer to Section 8.4 for details of exercises around each of the EI dimensions presented in the training program (exercises were drawn from the link made between previous literature examining training programs in empathy, anger and conflict management and their relevance to changing, developing or teaching individuals about their own and others emotions). The final session of the training program would include a summary of the program and an integration of the concepts of EI and stress, this session would also encourage group feedback and interaction with an emphasis on the plan to move forward.

It should be noted that the EI dimension *Emotions Direct Cognition* was not included in the EI training program for two reasons. The first was due to the time constraints imposed by the employing school of the participants, which did not provide enough time to cover all five dimensions in sufficient depth, and the second, more importantly, was the lack of relationship found in Study 1 between this dimension of EI and the occupational stress process. Due to the finding of a lack of relationship between the two constructs it was considered inappropriate to focus sessions on developing this ability when it was unrelated to the outcomes being sought.

Specific learning goals were formulated for each of the sessions based on the target variable of each session. For example, session 1 covered the introduction to the program as a whole and the main variables of occupational stress and strain. The learning goals for this session were: understanding the roles and responsibilities of the trainer and the employee in the program, identifying actual and potential causes of stress in the workplace, identifying and understanding the consequences of stress (relating to health, satisfaction and commitment), and understanding how to assess occupational stress.

Throughout each session employees would be encouraged to share their own experiences and comment on the experiences of others. A variety of techniques in presentation would be adopted, including mini-lectures, group interaction, paired skills training and feedback and individual training tasks. For each session employees would be given exercises to take home and complete before the group rejoined one week later. These exercises would be optional for the employees to complete but would give them the opportunity to practise the skills they learnt in the session.

9.1.3 Write-up of the Manuals

The final stage in the development of the EI training program was the write-up of trainer and employee manuals (Appendix 4) so the program would be standardised across groups. The manuals were divided into nine sections: 1) about the program; 2) outline of the program; 3) week 1 – introduction to the program and what is occupational stress; 4) week 2 - developing *Emotional Recognition and Expression*; 5) week 3 - developing *Understanding Emotions*; 6) week 4 - developing *Emotional Management* and *Emotional Control*; 7) week 5 - re-assessment and evaluating change; 8) contact information; and 9) additional reading material. Both the trainer manual and the employee manual contained the same information, except the trainer manual included questions to use as prompts to encourage group discussion and case study examples in case of no response from the group to specific exercises.

Each week of the program the employees were given the relevant notes to include in their own manuals, this was done so as to prevent employees from reading ahead and using case

examples provided rather than their own. The manuals included copies of all presentations and exercises, as well as 'long hand' notes relating to the constructs presented in each session. These 'long hand' notes were provided to further encourage employees to use their manual as a source of reference once the program was complete. Each week began with a summary of the material presented during the previous week and working through the take-home exercises as a group to reinforce the skills learnt the previous session. Employees were able to keep all materials and notes relating to the training program.

9.2 Method B: Implementation and Evaluation of the EI Training Program

9.2.1 Participants

Seventy-nine teachers from public schools (59 females, 20 males) participated in Study 2 which utilised a longitudinal design with a convenient sample. The sample was considered convenient due to the fact that only teachers were selected to take part in the training program (refer to Section 8.6 for reasons). This type of sampling is a limitation of the current study and could result in the findings only being specific to this occupation group.

The mean age of the teachers who participated in this study was 43.6 years, with an age range from 24 years to 66 years. Teachers were recruited from the primary education sector (N = 24), the secondary education sector (N = 27) and the tertiary education sector (N = 28).

The length of time in which teachers were employed within their current school varied. Thirty-eight teachers had been with their current school for five or more years (48.1%), twenty-eight teachers had been there for between one and five years (35.4%), seven teachers had been there for between six months and one year (8.9%), and two had been there for less than six months (2.5%). Four teachers did not respond to this question (5.1%).

The number of days absent from work in the previous six months (due to illness) ranged from no days absent to 50 days absent (M = 4.68 days, SD = 7.17). The number of hours per day teachers worked ranged from four hours to 12 hours (M = 9.03 hours, SD = 1.59).

Ethics approval for the study was sought and received from Swinburne University of Technology and the Victorian Department of Education and Training. Refer to Appendix 5 for the information sheet and consent form.

9.3 Procedure

9.3.1 Recruitment

Teachers for the study were recruited from Victoria (Australia). Interest was generated in part due to a Short Course offered at Swinburne University of Technology on EI. Participants in the course were made aware (verbally) of the opportunity to have employees in their organisation take part in a research project, which led to Study 1 of this thesis. Through 'word of mouth' a school principal requested information regarding whether any workshops or training programs on EI could be run at the school's location. This school was signed up to the EI training program (Study 2 of this thesis) and through the school network 'word of mouth' in Victoria a number of other schools were recruited to participate in the program. Each school was offered the chance to enrol a maximum of 8 teachers in the training program, and all programs were run at the home school with teachers from that school only. All teachers from each of the interested schools were offered the opportunity to participate in the program and were instructed to give their name to the co-ordinating person from their school (usually the Principal or Vice-Principal). A time was then allocated to each school for the sessions to run (all sessions ran after school hours) and individual teachers were posted out questionnaires to complete before the program began.

9.3.2 Design

Two waves of the program were constructed to allow for the adoption of multiple baseline testing procedure and because of the limitations of when the program could be run (after school hours). Both waves received exactly the same program. Thirty-seven teachers were

enrolled in the first wave of the program and forty-two teachers in the second wave of the program. All teachers participated in data collection immediately before the program began, immediately after the program finished, and 5 weeks post-program. The forty-two teachers who were enrolled in the second wave of the program also participated in an additional data collection stage at 5 weeks pre-program. Due to time constraints only teachers who were enrolled in the second wave of the program were able to complete the 5-week pre-program questionnaire (for a diagrammatic representation see Figure 2 below). Therefore there was a total four stages of questionnaire collection:

1. Time one: five weeks prior to the EI training program when participants were wait-listed (pre-program measure).
2. Time two: immediately pre-program (pre-program measure).
3. Time three: immediately post-program (post-program measure).
4. Time four: five weeks post program (follow-up measure).

Two pre-program measures were chosen to implement with the teachers who were enrolled in the second wave of the program so as to obtain a baseline measure that was reflective of the teacher's experiences over time prior to them participating in the EI training program (see Section 10.3.1). A five-week follow-up period was included in the training program in order to determine the effectiveness of the training program over time. A second, longer term, follow-up period would have been ideal, however time constraints prevented this, which is a possible limitation to this study.

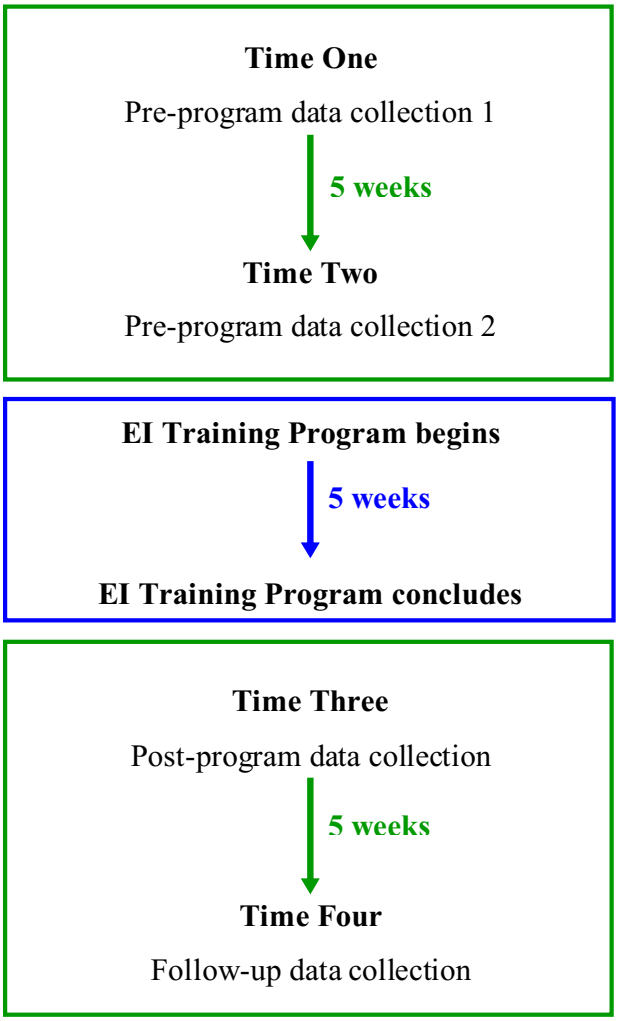

Figure 2: Design of the EI Training Program

9.3.3 The Training Program

In total, ten groups were run to evaluate the EI training program. The structure and content of the groups was identical across the different schools in which the program was run. The candidate co-ordinated and ran all ten groups.

The EI training program consisted of 5 sessions of 2 hours duration per group. These sessions were held on a weekly basis and consisted of between 6 and 8 teachers per group. Each group was comprised of teachers from within the same school. The candidate used the trainer manual developed as part of this thesis in each of the groups.

9.3.4 Instruments

The same questionnaire package was used at each of the four data collection points (see Section 9.2.2 above), which was the same questionnaire as was used in Study 1 (see Section 5.2.2). However it needs to be noted that the EI dimension *Emotions Direct Cognition* was not included in the training program and therefore was not included in the calculation of the *Total EI* score. The reliability co-efficients for each of the measures used in the training program across each time of collection are presented in Table 22. Each of the coefficients are within acceptable parameters.

Teachers were posted the questionnaire for Time One (if required) and Time Two, along with a reply paid envelope. They were given a copy of the questionnaire at the end of session 5 (the final session of the program) along with a reply paid envelope, and were posted a copy of the questionnaire and reply paid envelop after 5 weeks had elapsed from when they completed the program. At each time of data collection the teachers were instructed to complete and return the questionnaire within a specified 7-day period.

Table 22: Reliability Coefficients for the questionnaire package at the Four Different Data Collection Intervals for Study 2

Scale	Time 1		Time 2		Time 3		Time 4	
	α	**N**	**α**	**N**	**α**	**N**	**α**	**N**
SUEIT								
Emotional Recognition and Expression	.85	41	.82	75	.85	66	.87	63
Understanding Others Emotions	.86	41	.87	75	.90	66	.91	63
Emotional Management	.84	41	.84	75	.80	66	.81	63
Emotional Control	.82	41	.79	75	.73	66	.81	62
Total EI	.88	41	.89	75	.91	66	.90	62
ORQ								
Role Overload	.79	42	.84	75	.83	66	.82	63
Role Insufficiency	.82	42	.84	73	.83	66	.89	62
Role Ambiguity	.74	42	.81	75	.79	66	.79	62
Role Boundary	.81	42	.76	75	.60	66	.71	62
Responsibility	.82	42	.79	73	.68	66	.72	61
Physical Environment	.68	42	.73	73	.73	66	.75	61
GHQ-12	.89	35	.86	70	.86	60	.89	55
Physical Health Symptoms	.79	42	.82	72	.82	66	.79	62
Job Satisfaction								
External	.76	42	.73	76	.70	66	.81	61
Internal	.86	42	.86	76	.83	66	.92	61
Organisational Commitment	.94	39	.93	73	.94	66	.95	63
Work-Family Conflict								
Work-Family Conflict	.90	42	.93	76	.92	66	.92	61
Family-Work Conflict	.76	42	.80	75	.87	66	.84	61
NEO-FFM								
Neuroticism	.89	42	.89	75	.91	65	.86	63

9.4 Data Entry and Analysis

All data entry and analyses were conducted using SPSS version 12.0 (SPSS, 2003). Data from the completed questionnaires was entered into SPSS and checked for entry errors. In assessing the normal distribution of the variables (examining the skewness statistic and the distribution of the normal curve) across each data collection stage none of the variables were sufficiently abnormal such to warrant the transformation of data. Descriptive statistics were then generated for each variable and were examined for outliers using the method recommended by Tabachnik and Fiddell (2001), whereby univariate outliers are characterized as cases with a *z* score over 3.29 ($p<.001$). Nine cases were identified as univariate outliers, each of which were truncated rather than removed from the analysis (as suggested by Osborne & Overbay, 2004). Refer to Appendix 6 for a detailed description of the outliers. Using Mahalanobis distance no multivariate outliers were detected.

Once data had been checked for normality and outliers, the SPSS Missing Value Analysis (MVA) procedure was run to highlight patterns of missing values in the data. Examination of the univariate statistics table revealed that some respondents had missed demographic information (see Section 9.1) but that generally no large amount of missing data was found for the main variables in the study. There was no missing data for Time One of the training program, however, at Time Two one teacher missed data for *Psychological* and *Physical Health* and one teacher missed data for *Organisational Commitment* and the facets of stress. At Time Three no missing data was identified in the main variables, however, at Time Four one teacher missed data for *Psychological Health* and one was missing data for the facets of stress, finally, two teachers were missing data for *Job Satisfaction, Physical Health* and *Work-Family Conflict* (although not the same two teachers for each of these variables). Due to the small amount of missing data across this training program it was not considered necessary to remove these teachers from analyses.

9.4.1 General Exploration of Emotional Intelligence, Stress and Strain in Teachers

To test for relationships between the demographic variables and the main variables (EI , stress and strain) included in Study 2, Pearson product-moment correlation coefficients

(two-tailed) were computed using SPSS. For reasons of consistency, descriptions of correlations were based on the guidelines for conventional practice outlined by Cohen and Cohen (1983). According to these guidelines effect sizes for correlations are as follows: r = .10 (classified as weak), r = .30 (classified as moderate), and r > .50 (classified as strong). A number of statistical techniques were used to compare the differences between groups and time in Study 2. Independent sample t-tests were performed to investigate gender differences in the major variables of the study. A number of one-way analysis of variance (ANOVA) were conducted to investigate the relationship between the length of time the teacher had been employed at their current school and the major variables of the study, and the differences in primary, secondary and tertiary teachers for the major variables of the study. Where appropriate effect sizes were estimated using Hedges ĝ (Devilly, 2005). An effect size is the strength of the difference between two groups (for example, males and females) or between two time points of the same group (for example, before and after an intervention program). Cohen (1992) provides guidelines to interpret effect sizes for Hedges ĝ and suggested that an effect size of 0.2 indicates a small effect, 0.5 a medium effect and 0.8 a large effect size. Hedges and Olkin (1985) noted that an effect size estimate could be adjusted to take into account the sample size and provided the formula for calculating Hedges ĝ. This adjusted effect size (Hedges ĝ) will be used in this thesis instead of the often used Cohen's d estimate of effect size in order to take into account the small sample sizes used in analyses. In the case where more than two groups are being compared (for example, when primary, secondary and tertiary teachers are being compared as three separate groups) Hedges ĝ is not appropriate. Instead, partial eta squared (η^2) will be calculated to determine effect size for ANOVAs comparing more than two groups. Cohen (1988) provides guidelines to interpret the strength of η^2: .01 indicates a small effect, .06 indicates a medium effect, and .14 indicates a large effect size. Note that effect sizes are reported for all analyses, even where the p-value is not significant. This was for the purpose of table completion only as it is acknowledged that effect size is not relevant unless the p-value is less than .05.

9.4.2 Evaluation of the Emotional Intelligence Training Program

A series of paired samples t-tests were performed to investigate the multiple baseline data (Time One and Time Two) for the major variables of the study. Following this, a number of repeated measures ANOVAs were conducted to investigate the effect of the training program on each of the major variables of the study. Simple contrasts were performed for all significant findings to investigate how the major variables changed from pre- to post-program and from pre- to follow-up of the program. Effect sizes were calculated using Hedges ĝ (see Section 9.4.1) and power (P) is reported so as to contribute to the meaningfulness of the findings.

Further analyses were conducted to investigate the reliability of change in some of the major variables from pre- to post-program. In order to determine how many teachers showed reliable change after participating in the EI training program, a reliable change (RC) index was calculated for EI, occupational stress and *Psychological Health*. As outlined by Maassen (2000) the difference between observed pre- and post-test scores are an obvious measure of change, however, only if the variables assessed perfectly measure the phenomenon they are supposed to measure is the observed difference really dependable. Observed differences in pre- to post-test scores may be partially or even totally due to measurement error, practise effects, or sample fluctuations, and it has become increasingly important now to assess the extent to which any observed changes in pre- to post-tests scores are statistically reliable (Maassen).

All RC indices in this study were calculated using Devilly's (2005) reliable and clinical change generator which is based on the formulae of Jacobson and Truax (1991). The criterion used to interpret reliable change was taken from Jacobson and Truax. These authors suggested that a RC index larger than 1.96 ($p<.05$) is unlikely to occur without actual change in the individual. Reliability data for the four EI dimensions used in the RC calculations was obtained from the technical manual of the SUEIT (Palmer & Stough, 2001). For *Psychological Health* the reliability data was obtained from Hardy, Shapiro, Haynes and Rick (1999). The technical manual of the occupational stress measure (Osipow, 1998) reports poor test-retest reliability coefficients, ranging from .41 to .68, therefore test-

retest reliability coefficients from the current study will be calculated from the Time One to Time Two data (where no training program was taking place) and this data will be used to generate a RC index. In the group of 27 teachers who participated in both Time One and Time Two testing (the two pre-program time intervals) the test-retest reliability for *Role Overload* was .87, for *Role Insufficiency* was .82, for *Role Ambiguity* was .75, for *Role Boundary* was .81, for *Responsibility* was .76, and for *Physical Environment* it was .83. The normative data required to calculate the RC index will be taken from the 'professional' occupational group presented in the technical manual of the OSI-R (Osipow).

The following chapter of this thesis (Chapter 10) presents the evaluation of the EI training program, based on the methodology outlined above. These results are discussed in detail in Chapter 11.

CHAPTER 10:
STUDY 2: RESULTS

10.1 Attrition, Session Attendance and Questionnaire Completion

Sample retention was high over the course of the training program, with the majority of teachers attending all five training sessions; however some failed to complete the questionnaire at the designated data collection times. Of the 79 teachers who participated in the EI training program, 73 teachers (92.4%) attended all five sessions. Six teachers (7.5%) missed one of the five sessions and four teachers (5%) missed two of the five sessions. Teachers who missed sessions did so for reasons unrelated to the study (e.g. prior work or family commitment). All teachers were strongly encouraged to attend all five sessions.

The completion rate for the questionnaire at each data collection interval was relatively high at each of the four testing times (Table 23 below). Teachers who participated in the first wave of the program completed questionnaires at three time intervals, teachers who participated in the second wave of the program completed questionnaires at four time intervals.

Table 23: Questionnaire Completion Rate at the Four Testing Times

Completed Questionnaires (%)	Time 1	Time 2	Time 3	Time 4
Wave 1 [b]		37 (100%)	30 (81%)	30 (81%)
Wave 2 [a]	42 (100%)	39 (93%)	35 (83%)	31 (74%)
Total Completion Rate	42 (100%)	76 (95%)	65 (82%)	61 (77%)

[a] Total possible N = 37; [b] Total possible N = 42

Table 23 shows the completion rate of the questionnaire at each of the four testing times for the first and second wave of the training program as well as the total completion rates. Overall the completion rate from the teachers was relatively high; however some teachers did not complete the questionnaire at certain time points. At Time One, the first of the pre-

program measures, all forty-two teachers completed the questionnaire. These teachers were involved in the second wave of the training program and were the only ones to participate in the 5-week pre-program testing phase. Time Two questionnaires were completed immediately before the program began (for all teachers). Teachers were posted the questionnaire 10 days before the program began and were instructed to return it (via a reply paid envelope) within 7 days. Seventy-six of the teachers completed this pre-program assessment, with four of the teachers failing to post their questionnaire back before the program began (all four of these teachers were from the second wave of the program). Time Three questionnaires were completed immediately after the program. Teachers were handed the questionnaire in the last session of the program and were instructed to return it within 7 days. Sixty-five teachers returned their questionnaire within the specified time period; thirty of these teachers were from the first wave of the program and thirty-five from the second wave of the program. Time Four was a follow-up data collection point. Teachers were posted the same questionnaire again and were asked in a covering letter to return the questionnaire within 7 days. Sixty-one teachers returned the questionnaire at this time point; thirty of these teachers were from the first wave of the program and thirty-one from the second wave of the program. It is possible that the length of the questionnaire (taking approximately 50 minutes to complete) reduced completion rates.

In the first wave of the program, twenty-seven teachers completed all three of the questionnaires. In the second wave of the program, twenty-eight teachers completed all four of the questionnaires. In total, fifty-five teachers completed assessments at Time Two (immediately pre-program), Three (immediately post-program) and Four (follow-up measure). Given that Time Two was chosen as the baseline measure (pre-program) for evaluating the EI training program (see Section 10.3.1), the total sample size on which the evaluation of the training program was based was 55 (i.e. 55 teachers completed all three assessments from Time Two to Time Four). Individual teachers who did not complete all three assessments were not included in the analysis.

10.2 General Exploration of Emotional Intelligence, Stress and Strain in Teachers

The first three objectives of Study 2 were to explore the levels of EI, occupational stress, strain (health) and outcomes of stress using the group of teachers entered into the analysis (N = 55) immediately before the EI training program began (Time Two).

10.2.1 Objective 1: Exploration of the Relationship between the major Variables and Demographic Characteristics

The current study sought to investigate whether the major variables of Study 2 (EI, occupational stress, strain and outcomes of stress) were related to the demographic characteristics of: 1) age; 2) gender; 3) number of days absent in the previous six months due to illness; 4) average number of hours worked per day; and 5) the length of time the teacher has been employed at their current school. Several analyses were conducted in order to investigate these relationships.

10.2.1.1 Age of the Teacher, Number of Days Absent, and Number of Hours Worked

Pearson correlations were performed to determine whether a relationship existed between the major variables of Study 2 and the age of the teacher, number of days the teacher was absent in the previous six months (due to illness only) and the average number of hours the teacher worked per day. Two-tailed tests were used in these analyses (and all subsequent analyses of Study 2). The results of these analyses are presented in Table 24.

Table 24: Correlations between Major Variables and Age, Absenteeism and Hours Worked

	Age	Number of Days Absent	Number of Hours Worked
Emotional Recognition & Expression [a]	.16	.18	.29*
Understanding Emotions [a]	-.13	-.26	.24
Emotional Management [a]	.09	-.01	.16
Emotional Control [a]	.11	.01	.11
Total EI [a]	.06	.16	.26
Role Overload [b]	.00	.13	.37**
Role Insufficiency [b]	.05	-.04	-.15
Role Ambiguity [b]	-.01	-.05	-.06
Role Boundary [b]	-.10	.11	.04
Responsibility [b]	-.01	.04	.37**
Physical Environment [b]	-.02	.24	.05
Psychological Health [b]	-.08	.04	-.03
Physical Health [b]	-.23	.18	-.01
External Job Satisfaction [a]	.04	-.02	-.05
Internal Job Satisfaction [a]	-.09	-.13	.08
Organisational Commitment [b]	.09	.03	.08
Work-Family Conflict [a]	.06	-.05	.33**
Family-Work Conflict [a]	.32*	.09	-.04

[a]N = 54, [b]N = 53; *p<.05; **p <.01.

Table 24 shows the correlations between *EI, Occupational Stress, Psychological* and *Physical Health, Job Satisfaction, Organisational Commitment* and *Work-Family Conflict* with the age of teachers in the training program, the number of days the teachers were ill

off work in the previous six months and the average number of hours the teachers worked per day.

As can be seen in Table 24, no relationship was found between any of the major variables of the study and the number of days teachers were absent due to illness in the previous six months. However, some relationships emerged between the major variables of the study and the average number of hours worked per day. *Emotional Recognition and Expression* was positively related to the number of hours worked, suggesting that teachers who recognised and expressed their emotions also tended to work longer hours compared to teachers who did not. Two facets of occupational stress, *Role Overload* and *Responsibility* were also positively related to the number of hours worked per day. This finding suggests that teachers who feel overloaded with work and who feel a greater sense of responsibility for their colleagues and students tend to work longer hours than teachers who do not report having these feelings. *Work-Family Conflict* showed a positive relationship with the number of hours worked per day, suggesting that teachers who feel that their work life is impacting on their family life in a negative way are also working more hours per day than those teachers who do not report this conflict of work-family balance. Finally, *Family-Work Conflict* showed a moderate positive relationship with age, suggesting that teachers who were older tended to feel that their family life is impacting on their work life than younger teachers.

10.2.1.2 Gender

In order to examine the mean differences between males (N = 18) and females (N = 37) for each of the variables in Study 2, independent sample t-tests were performed with gender as the independent variable (with two levels: male and female) and each of the variables of the study as the dependent variables. These results are presented in Table 25. Levene's test for equality of variances (i.e. the test for whether the variation of scores for males and females is the same) was larger than .05 in all t-tests performed which means that the assumption of equal variances is not violated and therefore "equal variances assumed" statistics are reported.

Table 25: Means (SDs), T-Statistics and Effect Size (ĝ) for Gender and the Major Variables

	MALES Mean (SD)	FEMALES[a] Mean (SD)	t (df), p value	ĝ
Emotional Recognition & Expression	37.1 (5.75) [b]	38.9 (5.99)	-1.08 (53), p= .28	.30
Understanding Emotions	70.8 (8.05) [b]	77.1 (6.98)	-2.98 (53), p= .01	.85
Emotional Management	36.7 (7.42) [b]	38.8 (4.91)	-1.26 (53), p= .21	.35
Emotional Control	29.8 (5.48) [b]	30.0 (4.92)	-0.33 (53), p= .74	.04
Total EI	174.4 (22.5)[b]	185.2 (16.9)	-1.98 (53), p= .06	.56
Role Overload	28.8 (7.84) [c]	31.6 (6.99)	-1.32 (52), p= .19	.38
Role Insufficiency	25.4 (8.15) [c]	21.0 (6.02)	2.24 (52), p= .03	.64
Role Ambiguity	24.1 (5.15) [c]	21.9 (7.58)	1.05 (52), p= .30	.31
Role Boundary	22.7 (5.99) [c]	22.3 (6.50)	0.21 (52), p= .84	.06
Responsibility	27.3 (7.66) [c]	27.1 (6.73)	0.08 (52), p= .94	.03
Physical Environment	17.1 (4.57) [c]	17.0 (5.76)	0.06 (52), p= .95	.02
Psychological Health	13.0 (6.16) [c]	11.9 (4.51)	0.75 (52), p= .46	.21
Physical Health	26.2 (5.61) [c]	27.6 (6.13)	-0.78 (52), p= .44	.23
External Job Satisfaction	37.7 (6.82) [b]	37.7 (7.49)	-0.04 (53), p= .10	.00
Internal Job Satisfaction	31.9 (7.51) [b]	36.0 (6.01)	-2.21 (53), p= .03	.64
Organisational Commitment	5.1 (1.26) [c]	5.5 (1.31)	-1.11 (52), p= .27	.30
Work-Family Conflict	3.3 (0.86) [b]	3.7 (0.89)	-1.51 (53), p= .14	.45
Family-Work Conflict	1.9 (0.55) [b]	1.7 (0.56)	1.67 (53), p= .10	.35

[a]N = 37, [b]N = 18, [c]N = 17.

Table 25 shows the mean, SD, t-statistic and effect size (Hedges ĝ) for males and females for each of the variables of Study 2. As can be seen, there were three variables that scores

were significantly different for males and females: *Understanding Emotions, Role Insufficiency* and *Internal Job Satisfaction*. Females scored higher on measures of *Understanding Emotions* and *Internal Job Satisfaction* ($t(53) = -2.98$, $p<.05$, $\hat{g} = .85$; and $t(53) = -2.21$, $p<.05$, $\hat{g} = .64$ respectively), indicating that in this group of teachers, females were more able to understand the emotions of others in their work environment and that they felt more satisfied with the internal aspects of their job (such as level of responsibility and amount of variety in the job) than the male teachers. Males scored significantly higher on one of the facets of occupational stress, *Role Insufficiency*, than females ($t(52) = 2.24$, $p<.05$, $\hat{g} = .64$) which indicates that the male teachers felt as though their training and skills were not always appropriate for the tasks they were being given to do at work.

10.2.1.3 Length of Time Employed at Current School

In order to assess the impact of the length of time the teacher had been employed at their current school on each of the variables, a one-way analysis of variance (ANOVA) was performed with length of time employed at current school as the independent variable and each of the variables in Study 2 as the dependent variable. Length of time at the current school was a question in the demographic section of the questionnaire and asked the following: "How long have you been with this school?" The possible responses were; 1) under 6 months; 2) between 6 months and 1 year; 3) between 1 and 5 years; and 4) over 5 years. All significance values for Levene's test were above .05, indicating that the assumption of homogeneity of variances was not violated. Appendix 7 shows the mean, SD, F statistic and effect size (Hedges $\hat{g}$) for length of time employed with each variable of Study 2. There were no significant differences on any of the major variables of Study 2 based on the length of time the teacher had been employed at their current school.

10.2.2 Objective 2: Exploration of the Levels of Emotional Intelligence and Occupational Stress in Different Types of Teachers

The current study sought to investigate whether EI and occupational stress differed depending on whether the teacher taught primary, secondary or tertiary education. A series of one-way ANOVAs were performed with the school type (primary, secondary or tertiary) as the independent variable and EI and occupational stress as the dependent variables.

Levene's test for homogeneity of variances was not violated for any of the analyses, with the exception of *Physical Environment*. For this facet of occupational stress Levene's test was below .05 which indicates that the assumption of homogeneity of variances has been violated, therefore the Brown-Forsyth statistic will be reported for this variable, as is recommended by Pallant (2005). The results of these analyses are reported in Table 26.

Table 26: Means (SDs), and F Statistics for Emotional Intelligence and Occupational Stress in Different Types of Teachers

	TYPE OF TEACHER			
	Primary[a]	**Secondary[b]**	**Tertiary**	
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**F (df), p value**
ERE	38.4 (4.90)	39.0 (5.60)	37.6 (7.34) [c]	0.25 (2,54), p=.78
Understanding Emotions	76.5 (7.07)	75.2 (7.04)	73.3 (9.35) [c]	0.79 (2,54), p=.46
Emotional Management	39.3 (4.47)	39.4 (5.53)	35.7 (6.95) [c]	2.53 (2,54), p=.09
Emotional Control	30.8 (4.19)	30.9 (3.77)	28.8 (6.75) [c]	0.93 (2,54), p=.40
Total EI	184.9 (14.71)	184.5 (17.94)	175.3 (24.1)[c]	1.47 (2,55), p=.24
Role Overload	32.6 (6.86)	32.5 (6.92)	26.6 (6.94) [d]	4.24 (2,53), p=.02
Role Insufficiency	18.7 (6.23)	22.1 (6.22)	27.1 (6.08) [d]	8.54 (2,53), p=.01
Role Ambiguity	21.6 (8.24)	20.7 (5.83)	25.7 (5.42) [d]	2.74 (2,53), p=.07
Role Boundary	21.6 (7.08)	22.2 (5.96)	23.7 (5.77) [d]	0.53 (2,53), p=.59
Responsibility	26.6 (6.05)	28.0 (6.72)	27.1 (8.42) [d]	0.19 (2,53), p=.82
Physical Environment	17.8 (7.17)	16.9 (5.08)	16.3 (2.69) [d]	0.39 (2,40), p=.68

[a]N = 20, [b]N = 17, [c]N = 18, [d]N = 17. *Note*: ERE = Emotional Recognition and Expression

Table 26 shows the means, SDs and F statistic for EI and occupational stress according to the type of teacher (primary, secondary or tertiary). There were no significant differences for EI and type of teacher, however two significant differences were found for occupational stress, specifically *Role Overload* ($F(2, 53) = 4.24$, $p<.05$) and *Role Insufficiency* ($F(2, 53) = 8.54$, $p<.05$). The effect size for both of these differences was large (using the guidelines proposed by Cohen, 1988), $\eta^2 = .14$ and $\eta^2 = .25$ respectively. Post-hoc comparisons using the Tukey HSD test ($p<.05$) indicated that the average score on *Role Overload* for tertiary teachers ($M = 26.6$, $SD = 6.94$) was significantly lower than for primary teachers ($M = 32.6$, $SD = 6.86$) and secondary teachers ($M = 32.5$, $SD = 6.92$) and that the average score on *Role Insufficiency* for primary teachers ($M = 18.7$, $SD = 6.23$) was significantly lower than for tertiary teachers ($M = 27.1$, $SD = 6.08$). These result suggests that the tertiary teachers did not feel as though their job demands were exceeding their resources, however primary and secondary school teachers did feel this, and that primary school teachers felt that their training, education, skills, and experience were appropriate to what their job required whereas tertiary teachers did not feel that their training, education and skills were appropriate to what their job required.

10.2.3 Objective 3: Exploration of Employee Strain and Outcomes of Stress in Different Types of Teachers

The current study sought to investigate whether the amount of employee strain (measured by *Psychological Health* and *Physical Health*), *Job Satisfaction*, *Organisational Commitment,* and *Work-Family Conflict* experienced differed depending on whether the teacher taught in the primary, secondary or tertiary education sector. A series of one-way ANOVAs were performed with the school type (primary, secondary or tertiary) as the independent variable and the strains and outcomes of stress variables as the dependent variables. Levene's test for homogeneity of variances was not violated for any of the analyses, with all Levene's statistics being above .05. The results of these analyses are reported in Table 27.

Table 27: Means (SDs), and F Statistics for Employee Strain and Outcomes of Stress in Different Types of Teachers

	TYPE OF TEACHER			
	Primary[a]	**Secondary[b]**	**Tertiary[d]**	
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**F (df), p value**
Psychological Health	12.0 (5.06)	11.8 (4.00)[c]	12.9 (6.00)	0.26 (2,53), p=.77
Physical Health	27.6 (6.30)	26.3 (6.38)[c]	27.5 (5.39)	0.23 (2,53), p=.80
External Job Satisfaction	39.7 (6.98)	37.4 (5.84)	35.9 (8.40)	1.33 (2,54), p=.27
Internal Job Satisfaction	37.1 (5.89)	34.5 (6.78)	32.7 (7.03)	2.63 (2,54), p=.08
Organisational Commitment	5.61 (1.31)	5.92 (0.71)[c]	4.54 (1.34)	6.60 (2,53), p=.01
Work-Family Conflict	3.96 (0.83)	3.72 (0.86)	3.09 (0.78)	5.46 (2,54), p=.01
Family-Work Conflict	1.76 (0.60)	1.86 (0.59)	1.79 (0.56)	0.18 (2,54), p=.84

[a]N = 20, [b]N = 17, [c]N = 16, [d]N = 18.

Table 27 shows the means, SDs and F statistic for employee strain and outcomes of stress according to the type of teacher (primary, secondary or tertiary). There were no significant differences for employee strain (measured by *Psychological Health* and *Physical Health*), *Job Satisfaction* or *Family-Work Conflict* and type of teacher, however significant differences were found between the average score on *Organisational Commitment* ($F(2, 53) = 6.60$, $p<.05$) and *Work-Family Conflict* ($F(2, 54) = 5.46$, $p<.05$) for the different types of teachers. The effect size for both of these differences was large (Cohen, 1988), $\eta^2 = .21$ and $\eta^2 = .17$. Post-hoc comparisons using the Tukey HSD test ($p<.05$) indicated that the average score on *Organisational Commitment* was lower for tertiary teachers ($M = 4.54$, $SD = 1.34$)

than for primary (M = 5.61, SD = 1.31) or secondary school teachers (M = 5.92, SD = 0.71), and that the average score on *Work-Family Conflict* was higher for primary teachers (M = 3.96, SD = 0.83) than for tertiary teachers (M = 3.09, SD = 0.78). These findings suggest that tertiary teachers do not feel as committed and loyal to their school in comparison to primary and secondary teachers, and that primary teachers tend to experience greater conflict between their work life and family life (such that, the amount of time devoted to work and work related demands interferes with their family life) than tertiary teachers who reported less conflict from work life to family life.

10.3 Evaluation of the Emotional Intelligence Training Program

10.3.1 Baseline Measures

Two pre-program questionnaires (Time One and Time Two) were administered to the forty-two teachers who participated in second wave of the training program. It was expected that EI, employee strain and the outcomes of stress would remain stable or would not improve across this time interval as no active training program was taking place. The facets of occupational stress were expected to remain stable or even increase slightly during this stage, similar to the control group in Mikkelsen and Saksvik (1999). To assess this assumption, a series of paired t-tests were performed using each of major variables in Study 2. The group of teachers in these analyses consisted of all teachers who completed both Time One and Time Two assessments (N = 28), with the reduced sample size being a result of incomplete data sets across time. These results are presented in Table 28.

Table 27: Means (SDs), T-Statistic and Effect Size (ĝ) for the Major Variables at Time 1 and Time 2 (Pre-Program Measures)

	TIME 1 Mean (SD)	TIME 2 Mean (SD)	t (df), p value	ĝ
ERE [a]	37.6 (6.40)	38.6 (6.71)	-1.42 (27), p= .17	.15
Understanding Emotions [a]	73.4 (7.38)	73.8 (7.94)	-0.52 (27), p= .61	.05
Emotional Management [a]	37.2 (6.49)	37.4 (6.05)	-0.38 (27), p= .70	.03
Emotional Control [a]	30.0 (5.46)	29.9 (5.38)	0.96 (27), p= .92	.02
Total EI [a]	178.1 (18.90)	179.7 (20.23)	-0.76 (27), p= .45	.08
Role Overload [b]	29.3 (7.37)	29.9 (8.15)	-0.77 (26), p= .45	.08
Role Insufficiency [b]	22.8 (6.45)	24.7 (6.95)	-2.43 (26), p= .02	.28
Role Ambiguity [b]	21.9 (6.06)	23.7 (6.06)	-2.20 (26), p= .04	.29
Role Boundary [b]	20.1 (5.66)	22.1 (5.88)	-2.94 (26), p= .01	.35
Responsibility [b]	25.1 (7.64)	25.3 (7.16)	-0.19 (26), p= .85	.03
Physical Environment[b]	17.5 (4.47)	18.1 (4.48)	-1.07 (26), p= .29	.13
Psychological Health [b]	12.0 (4.68)	11.7 (5.09)	0.42 (26), p= .68	.06
Physical Health [b]	26.9 (5.61)	26.6 (5.90)	0.27 (26), p= .79	.05
External Job Satisfaction [a]	36.6 (7.17)	36.9 (6.10)	-0.42 (27), p= .68	.04
Internal Job Satisfaction [a]	33.4 (7.71)	33.6 (6.97)	-0.40 (27), p= .70	.03
Organisational Commitment [b]	5.16 (1.38)	5.20 (1.29)	-0.30 (26), p= .77	.03
Work-Family Conflict[a]	3.51 (0.88)	3.46 (0.84)	0.66 (27), p= .52	.06
Family-Work Conflict[a]	1.77 (0.52)	1.82 (0.51)	-0.59 (27), p= .56	.10

[a]N = 28, [b]N = 27, *Note*: ERE = Emotional Recognition and Expression

Table 28 shows the means, standard deviations (SD), t-statistics and effect size for the major variables of Study 2 at Time One and Time Two (the two baseline time intervals). As was expected there were no significant changes in the five EI dimensions (or total EI), employee strain or outcomes of stress from Time One to Time Two. Three of the six facets of occupational stress also showed no significant change from Time One to Time Two, however, *Role Insufficiency, Role Ambiguity* and *Role Boundary* all showed a slight increase from Time One to Time Two, suggesting that stress in these areas increased over this time period. This was not an unexpected finding as feelings of stress can change over time (Mikkelsen & Saksvik, 1999) and, importantly, the changes were not in the direction expected after completion of the EI training program (i.e. stress was increasing between Time One and Time Two), demonstrating that these teachers were not spontaneously decreasing in their levels of stress before the program began. Secondly, the strength of these relationships from Time One to Time Two (effect size) were all small in magnitude (see Cohen, 1992) which casts doubt as to the meaningfulness of the changes between these three stress facets.

10.3.2 Hypothesis 1: Emotional Intelligence

10.3.2.1 Repeated Measures ANOVA

A number of repeated measures ANOVAs using each of the EI dimensions (and *Total EI*) as the dependent variable and time as the within subjects factor (with three levels: Time Two pre-program, Time Three post-program and Time Four follow-up) were performed to test the hypothesis that the level of EI would increase following participation in the EI training program and that these changes would be maintained over time. The Pillai's Trace statistic was chosen for the analysis given that this statistic is robust to assumption violations. In the case where there is more than one degree of freedom (as in this study) Pillai's criterion pools the statistics for each dimension to test the effect, which is the preferred approach (see Tabachnick & Fidell, 2001). Additionally, when analysis are conducted with small sample sizes or if the research design is less that ideal, the robustness of Pillai's Trace becomes more important and is said to be the criterion of choice

(Tabachnick & Fidell). The Pillai's Trace statistic will be used in all subsequent analyses. The results of the repeated measures ANOVAs are presented in Table 29.

Table 29: Pillai's Trace statistics, F-Statistics and Significance for Emotional Intelligence Repeated Measures ANOVAs

	Pillai's Trace	F (df)	p value
Emotional Recognition & Expression	.26	9.32 (2, 53)	.00
Understanding Emotions	.43	20.33 (2, 53)	.00
Emotional Management	.55	32.35 (2, 53)	.00
Emotional Control	.34	13.53 (2, 53)	.00
Total EI	.53	29.65 (2, 53)	.00

N = 55

Table 29 shows the results of the repeated measures ANOVAs for each of the EI dimensions across the three testing times (pre-, post- and follow-up). As shown, there was a significant main effect for each of the EI dimensions, that is, there was a significant difference in the mean EI scores across the three time intervals.

10.3.2.2 Simple Contrasts

Simple contrasts were performed to examine the differences in mean EI scores between Time Two to Time Three (pre- to post-program), Time Two to Time Four (pre-program to follow-up) and Time Three to Time Four (post-program to follow-up). These results are presented in Table 30.

Table 30: F-Statistics, Significance, Effect Size (ĝ) and Power (P) for Emotional Intelligence from Pre- to Post-Program, Pre-Program to Follow-Up and Post-Program to Follow Up

	F (df)	p value	ĝ	P
Emotional Recognition and Expression				
(Pre- to Post-Program)	9.46 (1, 54)	.00	.33	.86
(Pre-Program to Follow-Up)	18.85 (1, 54)	.00	.52	.99
(Post-Program to Follow-Up)	4.39 (1, 54)	.04	.21	.54
Understanding Emotions				
(Pre- to Post-Program)	25.56 (1, 54)	.00	.44	.99
(Pre-Program to Follow-Up)	36.26 (1, 54)	.00	.65	1.00
(Post-Program to Follow-Up)	4.02 (1, 54)	.05	.07	.51
Emotional Management				
(Pre- to Post-Program)	37.35 (1, 54)	.00	.64	1.00
(Pre-Program to Follow-Up)	65.13 (1, 54)	.00	.80	1.00
(Post-Program to Follow-Up)	4.26 (1, 54)	.04	.18	.53
Emotional Control				
(Pre- to Post-Program)	12.48 (1, 54)	.00	.45	.93
(Pre-Program to Follow-Up)	26.64 (1, 54)	.00	.71	.99
(Post-Program to Follow-Up)	11.68 (1, 54)	.00	.33	.92
Total EI				
(Pre- to Post-Program)	37.72 (1, 54)	.00	.59	1.00
(Pre-Program to Follow-Up)	60.20 (1, 54)	.00	.81	1.00
(Post-Program to Follow-Up)	9.60 (1, 54)	.00	.23	.86

N = 55

Table 30 shows the results of the simple contrasts comparing the mean EI scores across time. Significant differences were found between pre- to post-program, pre-program to follow-up, as well as post-program to follow-up (note that for *Understanding Emotions* at post-program to follow up p = .05) for all of the EI dimensions. Effect sizes ranged from small to large, however power was consistently high for almost all comparisons (with the exception of post-program to follow-up for three of the dimensions; refer to Table 30). The mean scores for EI were then examined to determine the direction of change over time. These results are presented in Table 31.

Table 31: Ranges, Means and Standard Deviations (SD) for Emotional Intelligence across Three Time Intervals

	Range	Time 2 Pre-Program Mean (SD)	Time 3 Post-Program Mean (SD)	Time 4 Follow-Up Mean (SD)
Emotional Recognition and Expression	11 – 55	38.29 (5.92)	40.20 (5.58)	41.40 (6.00)
Understanding Emotions	20 – 100	75.05 (7.85)	78.67 (8.32)	80.25 (7.94)
Emotional Management	12 – 60	38.15 (5.86)	41.76 (5.27)	42.73 (5.54)
Emotional Control	9 – 45	30.16 (5.07)	32.18 (3.80)	33.55 (4.44)
Total EI	52 – 260	181.64 (19.38)	192.82 (18.05)	196.96 (17.93)

N = 55

Table 31 displays the means and standard deviations for the EI dimensions at each of the three time intervals. The mean EI scores presented in Table 31 support the hypothesis that the teacher's level of EI would increase following participation in the EI training program and that these changes would be maintained over time. The increase in EI dimensions over the three time intervals is clearly illustrated in Figures 3 through 7 below.

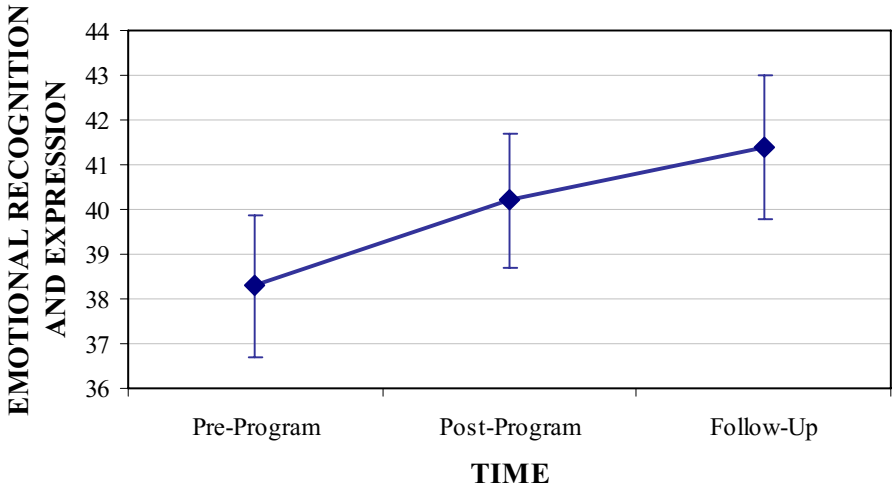

Figure 3: Mean Emotional Recognition and Expression at the Three Time Intervals

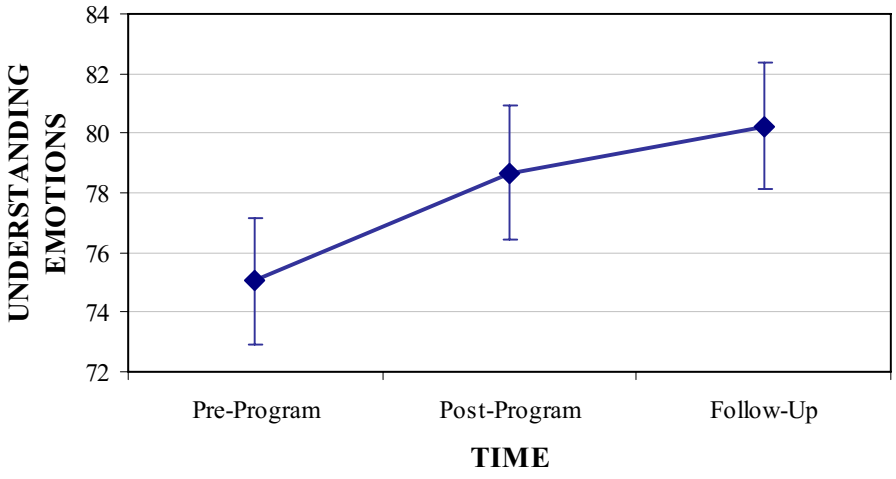

Figure 4: Mean Understanding Emotions at the Three Time Intervals

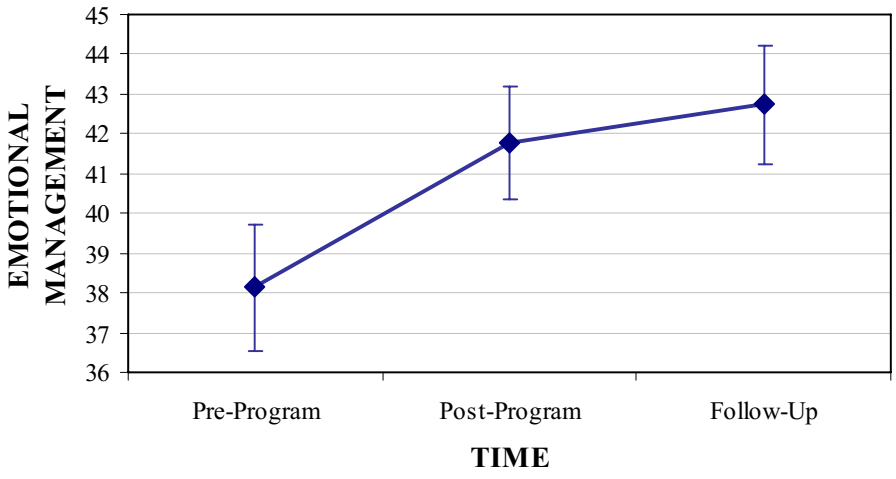

Figure 5: Mean Emotional Management at the Three Time Intervals

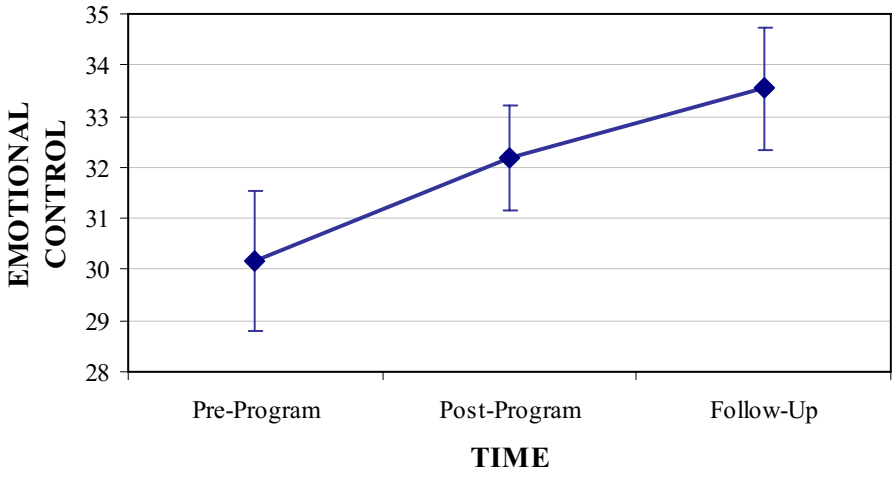

Figure 6: Mean Emotional Control at the Three Time Intervals

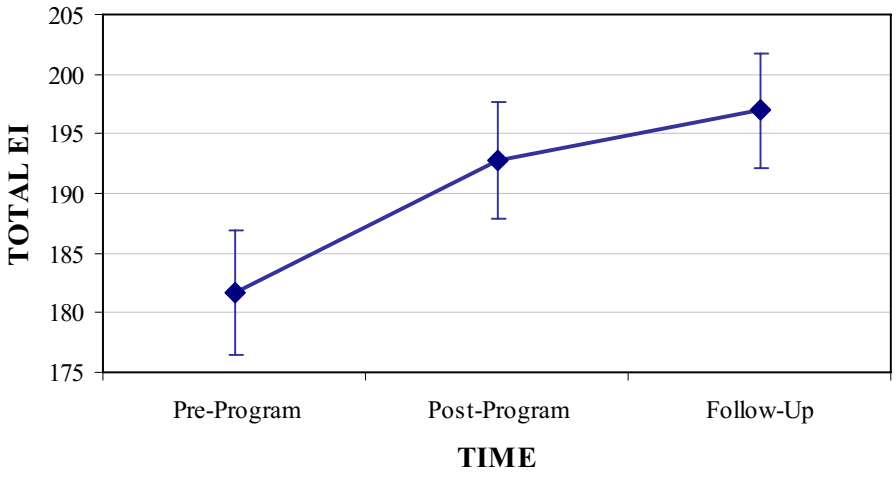

Figure 7: Mean Total EI at the Three Time Intervals

Figures 3 through 7 are diagrammatic representations of the mean EI scores at each of the three time intervals. Each of these figures illustrates an increase in EI over the three time intervals. Each of the pre- to post-program EI scores increase, as well as the pre-program to follow-up scores with all of these increases being statistically significant (see Table 30). These findings suggest that the EI training program had the effect of increasing teachers' levels of EI after program completion and that these changes continued to develop across time (as evidenced by the follow-up period).

10.3.2.3 Reliable Change

The results above indicate a statistically significant increase in teachers' levels of EI across time; however, this does not automatically translate into meaningful change at a functional level (Jacobson & Truax, 1991). To ascertain whether the teachers involved in the EI training program showed a meaningful change in EI a reliable change index was calculated for those who improved (or deteriorated) in EI over time ($p<.05$) (see Section 9.3.2). These results are presented in Table 32. Note that reliable change could not be calculated for the *Total EI* score as this score was calculated without the addition of one of the dimensions of EI (see Section 9.1.2) and therefore no reliability data was available in the technical manual for use in calculating the reliable change index.

Table 32: Number and Percentage of Teachers who Reliably Improved/Deteriorated in Emotional Intelligence (95% Confidence) Post-Program and Follow-Up

	Reliable Change N (%)
Emotional Recognition & Expression	(S_{Diff} = 2.94)
(Post-Program)	14^{+} (25.45), 2^{-} (3.64)
(Follow-Up)	25^{+} (45.45), 3^{-} (5.45)
Understanding Emotions	(S_{Diff} = 2.66)
(Post-Program)	22^{+} (40.00), 1^{-} (1.81)
(Follow-Up)	26^{+} (47.27), 2^{-} (3.64)
Emotional Management	(S_{Diff} = 2.75)
(Post-Program)	21^{+} (38.18), 0^{-} (0.00)
(Follow-Up)	22^{+} (40.00), 1^{-} (1.81)
Emotional Control	(S_{Diff} = 2.01)
(Post-Program)	15^{+} (27.27), 2^{-} (3.64)
(Follow-Up)	25^{+} (45.45), 1^{-} (1.81)

Note: S_{Diff} = Standard error of the difference in calculation of the reliable change index;
$^{+}$ = improvement; $^{-}$ = deterioration

Table 32 shows the number of teachers who showed a reliable change (both improvement and deterioration) in EI immediately after the training program and at the follow-up assessment. These results are promising in that a reasonable proportion of teachers who participated in the EI training program showed reliable improvement in their EI scores at post-program. An even greater number of teachers showed reliable improvement after more time had passed since participating in the training program. For each of the EI dimensions at least 40% of teachers reliably improved in their level of EI 5 weeks after the training program was completed (follow-up time period).

It should be noted that a small number of teachers involved in the training program showed reliable deterioration post-program and at the follow-up time point (see Table 32), although this number was only between one and three (representing just 1.81 – 5.45% of the entire

group). In one instance there was no reliable deterioration post-program (*Emotional Management*).

10.3.3 Hypothesis 2: Occupational Stress

10.3.3.1 Repeated Measures ANOVA

A number of repeated measures ANOVAs using each of the facets of occupational stress as the dependent variable and time as the within subjects factor (with three levels: Time Two pre-program, Time Three post-program and Time Four follow-up) were performed to test the hypothesis that the perceived level of occupational stress would decrease following participation in the EI training program and that these changes would be stable over the follow-up period. Results of these analyses are presented in Table 33.

Table 33: Pillai's Trace statistics, F-Statistics and Significance for Occupational Stress Repeated Measures ANOVAs

	Pillai's Trace	F (df)	p value
Role Overload	.11	3.16 (2, 51)	.04
Role Insufficiency	.07	2.01 (2, 51)	.14
Role Ambiguity	.40	17.30 (2, 51)	.00
Role Boundary	.27	9.27 (2, 51)	.00
Responsibility	.00	0.05 (2, 51)	.96
Physical Environment	.04	1.00 (2, 51)	.38

N = 53

Table 33 shows the results of the repeated measures ANOVAs for each of the facets of occupational stress across the three testing times (pre-, post- and follow-up). As shown, there was a significant main effect for three of the facets of occupational stress: *Role Overload, Role Ambiguity* and *Role Boundary*, that is, there was a significant difference in these three stress scores across the three time intervals. No main effects were observed for *Role Insufficiency, Responsibility* or *Physical Environment*.

10.3.3.2 Simple Contrasts

Simple contrasts were performed to examine the differences in mean occupational stress scores between Time Two to Time Three (pre- to post-program), Time Two to Time Four (pre-program to follow up) and Time Three to Time Four (post-program to follow-up). Note that only variables with significant main effects were included in this analysis. These results are presented in Table 34.

Table 34: F-Statistics, Significance, Effect Size (ĝ) and Power (P) for Occupational Stress from Pre- to Post-Program and Pre-Program to Follow-Up

	F (df)	p value	ĝ	P
Role Overload				
(Pre- to Post-Program)	1.50 (1, 52)	.23	.11	.23
(Pre-Program to Follow-Up)	6.44 (1, 52)	.01	.25	.70
(Post-Program to Follow-Up)	2.32 (1, 52)	.13	.16	.32
Role Ambiguity				
(Pre- to Post-Program)	5.00 (1, 52)	.03	.25	.59
(Pre-Program to Follow-Up)	33.42 (1, 52)	.00	.55	1.00
(Post-Program to Follow-Up)	9.72 (1, 52)	.00	.30	.86
Role Boundary				
(Pre- to Post-Program)	15.55 (1, 52)	.00	.35	.97
(Pre-Program to Follow-Up)	13.49 (1, 52)	.00	.41	.95
(Post-Program to Follow-Up)	0.51 (1, 52)	.48	.09	.11

N = 53

Table 34 shows the results of the simple contrasts comparing the mean occupational stress scores across time. Significant differences were found between pre- and post-program for *Role Ambiguity* and *Role Boundary*, between pre-program and follow-up for all of the occupational stress facets included in this analysis, and between post-program and follow up for *Role Ambiguity*. Effect sizes ranged from small to medium; however power remained

high for many of the comparisons (with the exception of *Role Overload* pre- to post-program and post-program to follow up and *Role Boundary* post-program to follow-up). The mean scores for these three facets of occupational stress were then examined to determine the direction of change over time. These results are presented in Table 35.

Table 35: Ranges, Means and Standard Deviations (SD) for Occupational Stress across Three Time Intervals

	Range	Time 2 Pre-Program Mean (SD) [a]	Time 3 Post-Program Mean (SD) [b]	Time 4 Follow-Up Mean (SD) [a]
Role Overload	10–50	30.69 (7.31)	29.93 (6.94)	28.80 (6.94)
Role Ambiguity	10–50	22.59 (6.94)	20.95 (6.27)	19.15 (5.46)
Role Boundary	10–50	22.44 (6.29)	20.49 (4.60)	20.06 (5.33)

[a]N = 54, [b]N = 55

Table 35 displays the means and standard deviations for the facets of occupational stress at each of the time intervals. The mean stress scores presented in Table 35 support the hypothesis that the teacher's level of occupational stress would decrease following participation in the EI training program and that these changes would be maintained over time (although it should be noted that only three of the six stress facets showed significant changes from before to after program completion, refer to Table 33). The decrease in occupational stress over the three time intervals is illustrated in Figures 8 through 10 below.

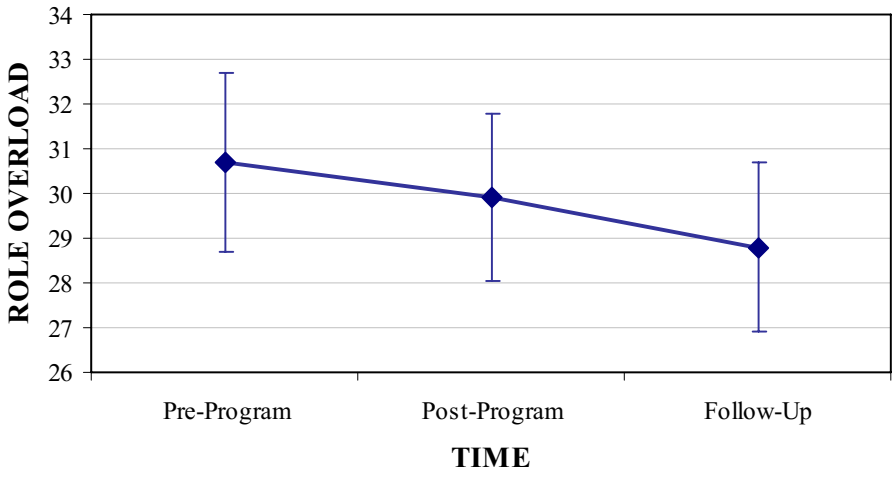

Figure 8: Mean Role Overload at the Three Time Intervals

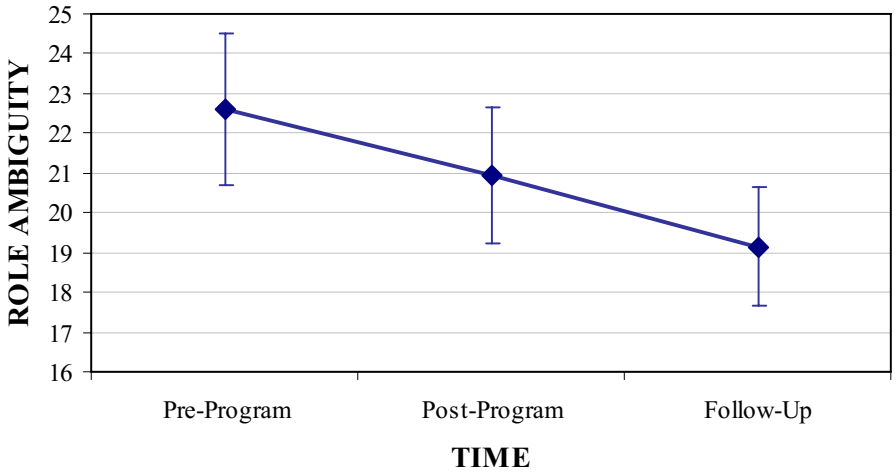

Figure 9: Mean Role Ambiguity at the Three Time Intervals

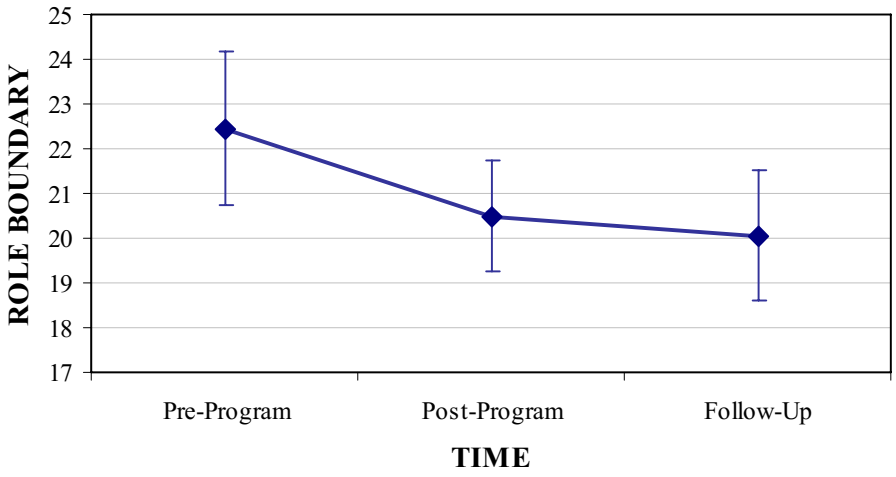

Figure 10: Mean Role Boundary at the Three Time Intervals

Figures 8 to 10 presented above are diagrammatic representations of the mean occupational stress scores for *Role Overload, Role Ambiguity* and *Role Boundary* at each of the three time intervals. Overall these figures illustrate a decrease in these facets of occupational stress across the time intervals with most of these differences being significant (see Table 34). The pre- to post-program difference and the post-program to follow-up difference for *Role Overload* was not statistically significant, although there was a general trend for *Role Overload* to decrease and this overall decrease in scores was statistically significant when comparing pre-program to follow-up scores (see Table 35). Similarly, the post-program to follow-up difference for *Role Boundary* was not statistically significant; however there was a slight trend for *Role Boundary* to continue to decrease between these time periods (Figure 10). Collectively these findings suggest that the EI training program had the effect of decreasing particular facets of occupational stress after program completion and that these feelings of stress continued to decrease across time (as evidenced by the follow-up period).

10.3.3.3 Reliable Change

A reliable change index was calculated (see Section 9.3.2) for the three facets of occupational stress that showed significant changes over time (see Table 34 and Table 35) in order to ascertain whether teachers showed meaningful changes (either improvement or deterioration) in their levels of occupational stress immediately after participation in the EI

training program and again after a follow-up period. These results are presented in Table 36.

Table 36: Number and Percentage of Teachers who Reliably Improved/Deteriorated in Occupational Stress (95% Confidence) Post-Program and Follow-Up

	Reliable Change N (%)
Role Overload	(S_{Diff} = 3.69)
(Post-Program)	5^{+} (9.26), 3^{-} (5.56)
(Follow-Up)	8^{+} (14.81), 2^{-} (3.70)
Role Ambiguity	(S_{Diff} = 4.28)
(Post-Program)	8^{+} (14.81), 1^{-} (1.85)
(Follow-Up)	8^{+} (14.81), 0^{-} (0.00)
Role Boundary	(S_{Diff} = 3.43)
(Post-Program)	9^{+} (16.67), 1^{-} (1.85)
(Follow-Up)	15^{+} (27.78), 0^{-} (0.00)

Note: S_{Diff} = Standard error of the difference in calculation of the reliable change index;
$^{+}$ = improvement; $^{-}$ = deterioration

Table 36 displays the number and percentage of teachers who showed reliable change (both improvement and deterioration) in occupational stress immediately after the EI training program and at the follow-up time point. These results show that a number of teachers reliably decreased their feelings of occupational stress after the training program (ranging from 9.26% to 16.76%) and that even more teachers reliably changed in terms of their feelings of occupational stress at the follow-up time point (ranging from 14.81% to 27.78%). Very few teachers showed reliable deterioration (i.e. increase in stress scores) post-program, and importantly, at the follow-up time point no teachers showed reliable deterioration in either *Role Ambiguity* or *Role Boundary*.

10.3.4 Hypothesis 3: Employee Strain

10.3.4.1 Repeated Measures ANOVA

Two repeated measures ANOVAs using each of the measures of employee strain (*Psychological* and *Physical Health*) as the dependent variable and time as the within subjects factor (with three levels: Time Two pre-program, Time Three post-program and Time Four follow-up) were performed to test the hypothesis that employee strain would decrease following participation in the EI training program and that these changes would be stable over the follow-up period. The results of the repeated measures ANOVAs are presented in Table 37.

Table 37: Pillai's Trace statistics, F-Statistics and Significance for Employee Strain Repeated Measures ANOVAs

	Pillai's Trace	F (df)	p value
Psychological Health [a]	.28	9.95 (2, 51)	.00
Physical Health [b]	.30	10.83 (2, 50)	.00

[a]N = 53, [b]N = 52

Table 37 shows the results of the repeated measures ANOVAs for both of the employee strain measures (*Psychological* and *Physical Health*) across the three testing times (pre-, post- and follow-up). As shown, there was a significant main effect for each of the measures of employee strain, that is, there was a significant difference in the mean strain scores across the three time intervals.

10.3.4.2 Simple Contrasts

Simple contrasts were performed to examine the differences in mean employee strain scores between Time Two to Time Three (pre- to post-program), Time Two to Time Four (pre-program to follow-up) and Time Three to Time Four (post-program to follow-up). These results are presented in Table 38.

Table 38: F-Statistics, Significance, Effect Size (ĝ) and Power (P) for Employee Strain from Pre- to Post-Program and Pre-Program to Follow-Up

	F (df)	p value	ĝ	P
Psychological Health [a]				
(Pre- to Post-Program)	18.14 (1, 52)	.00	.59	.99
(Pre-Program to Follow-Up)	15.79 (1, 52)	.00	.66	.97
(Post-Program to Follow-Up)	0.99 (1, 52)	.33	.15	.16
Physical Health [b]				
(Pre- to Post-Program)	17.65 (1, 51)	.00	.42	.99
(Pre-Program to Follow-Up)	21.02 (1, 51)	.00	.53	.99
(Post-Program to Follow-Up)	1.56 (1, 51)	.22	.13	.23

[a]N = 53, [b]N = 52

Table 38 shows the results of the simple contrasts comparing the mean employee strain scores across time. Significant differences were found between pre- and post-program as well as pre-program and follow-up for both of the measures of employee strain. No significant differences were found between post-program and follow-up for either of the measures of employee strain. Effect sizes were medium and power was consistently high for the significant comparisons (refer to Table 38). The mean scores for employee strain were then examined to determine the direction of change over time. These results are presented in Table 39.

Table 39: Ranges, Means and Standard Deviations (SD) for Employee Strain across Three Time Intervals

	Range	Time 2 Pre-Program Mean (SD)	Time 3 Post-Program Mean (SD)	Time 4 Follow-Up Mean (SD)
Psychological Health	0 – 36	12.24 (5.05) [b]	9.36 (4.72) [a]	8.59 (5.56) [b]
Physical Health	11 – 55	27.17 (5.95) [b]	24.53 (6.57) [a]	23.72 (6.19) [c]

[a]N = 55, [b]N = 54, [c]N = 53

Table 39 displays the means and standard deviations for the two measures of employee strain at each of the three time intervals. The mean strain scores presented in Table 39 support the hypothesis that the teachers' levels of strain will decrease following participation in the EI training program and that these changes will be maintained over time (although the difference in scores post-program to follow up was not statistically significant, there was a trend where scores continued to decrease). The decrease in strain over the three time intervals is clearly illustrated in Figures 11 and 12 below.

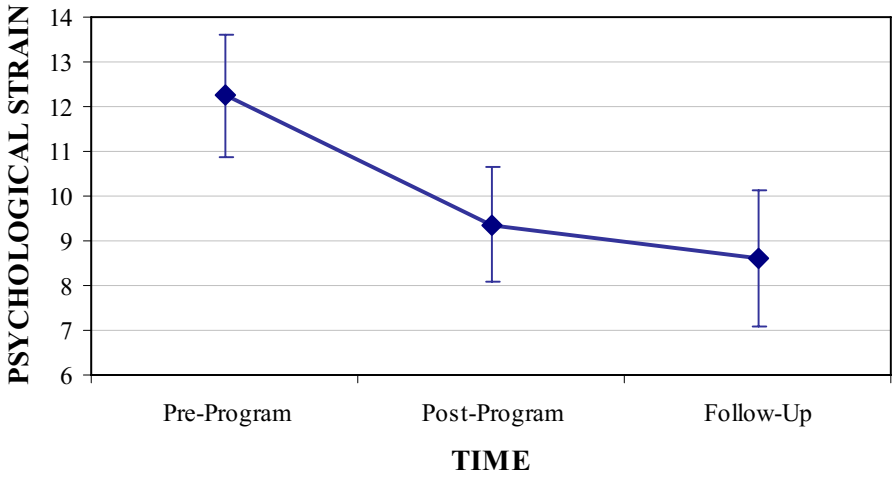

Figure 11: Mean Psychological Strain at the Three Time Intervals

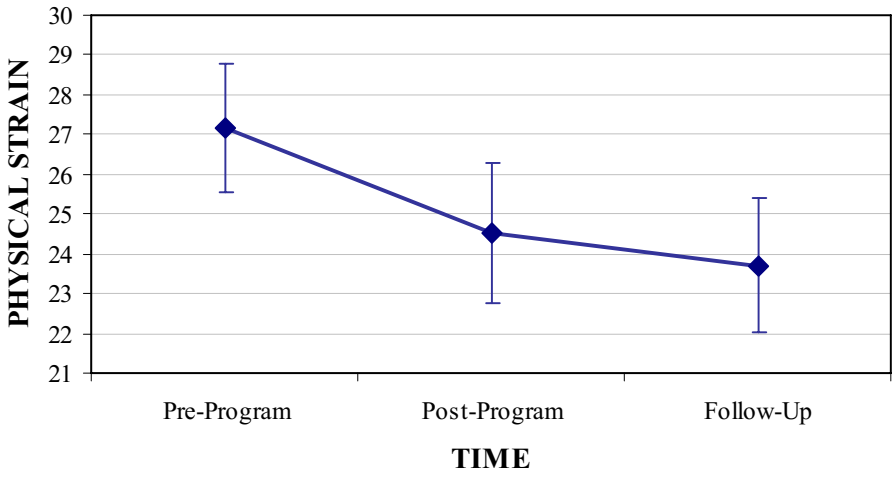

Figure 12: Mean Physical Strain at the Three Time Intervals

Figures 11 and 12 are diagrammatic representations of the mean employee strain scores at each of the three time intervals. Both of these figures illustrate a decrease in employee strain over the three time intervals. Each of the pre- to post-program strain scores decrease, as well as the pre-program to follow-up scores with each of these decreases being statistically significant (see Table 38). Although the scores from post-program to follow up were not significantly different, Figures 11 and 12 illustrate a tendency for these scores to continue to decrease across this time interval. These findings suggest that the EI training program had the effect of decreasing teacher's levels of strain (ill-health) after program completion and that these levels continued to decrease across time (as evidenced by the follow-up period).

10.3.4.3 Reliable Change

A reliable change index was calculated (see Section 9.3.2) for *Psychological Health*, one of the measures of employee strain, in order to ascertain whether the teachers in this training program showed meaningful changes (either improvement or deterioration) in their levels of *Psychological Health* immediately after participation in the EI training program and again after a follow-up period. These results are presented in Table 40.

Table 40: Number and Percentage of Teachers who Reliably Improved/Deteriorated in Psychological Health (95% Confidence) Post-Program and Follow-Up

	Reliable Change N (%)
Psychological Health	(S_{Diff} = 4.24)
(Post-Program)	21^{+} (38.89), 4^{-} (7.41)
(Follow-Up)	26^{+} (49.06), 5^{-} (9.43)

Note: S_{Diff} = Standard error of the difference in calculation of the reliable change index;
$^{+}$ = improvement; $^{-}$ = deterioration

Table 40 displays the number and percentage of teachers who showed reliable change (both improvement and deterioration) in *Psychological Health* immediately after the EI training program and at the follow-up time point. These results are promising given that 38.89% and 49.06% of teachers who participated in the EI training program showed reliable

improvement in *Psychological Health* from pre- to post-program and from pre-program to follow-up. It should be noted, however, that a minimal number of teachers reliably deteriorated (i.e. mental health decreased) immediately after the program (7.41%) and at the follow-up time point (9.43%).

10.3.5 Objective 4: Exploration of Changes in Outcomes of Stress

10.3.5.1 Repeated Measures ANOVA

A number of repeated measures ANOVAs using each of the outcomes of stress (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*) as the dependent variable and time as the within subjects factor (with three levels: Time Two pre-program, Time Three post-program and Time Four follow-up) were performed to explore whether there was a change in levels of *Job Satisfaction, Organisational Commitment* or *Work-Family Conflict* from before the training program to after the training program and if there were changes, whether they would be stable over the follow-up period. The results of the repeated measures ANOVAs are presented in Table 41.

Table 41: Pillai's Trace statistics, F-Statistics and Significance for the Outcomes of Stress Repeated Measures ANOVAs

	Pillai's Trace	F (df)	p value
External Job Satisfaction [a]	.14	4.06 (2, 51)	.02
Internal Job Satisfaction [a]	.15	4.55 (2, 51)	.02
Organisational Commitment [b]	.05	1.42 (2, 52)	.25
Work-Family Conflict [a]	.47	22.88 (2, 51)	.00
Family-Work Conflict [a]	.06	1.61 (2, 51)	.21

[a]N = 53, [b]N = 54

Table 41 shows the results of the repeated measures ANOVAs for the outcomes of occupational stress (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*) across the three testing times (pre-, post- and follow-up). As shown, there was a significant main effect for each of the measures of *Job Satisfaction* and for *Work-Family*

Conflict, that is, there was a significant difference in the mean scores in *Job Satisfaction* and *Work-Family Conflict* across the three time intervals. No significant main effects were found for *Organisational Commitment* or *Family-Work Conflict*.

10.3.5.2 Simple Contrasts

Simple contrasts were performed to examine the differences in mean employee strain scores between Time Two to Time Three (pre- to post-program), Time Two to Time Four (pre-program to follow-up) and Time Three to Time Four (post-program to follow-up). Note that only variables with significant main effects were included in this analysis. These results are presented in Table 42.

Table 42: F-Statistics, Significance, Effect Size (ĝ) and Power (P) for the Outcomes of Stress from Pre- to Post-Program and Pre-Program to Follow-Up

	F (df)	p value	ĝ	P
External Job Satisfaction				
(Pre- to Post-Program)	0.20 (1, 52)	.66	.05	.07
(Pre-Program to Follow-Up)	6.68 (1, 52)	.01	.29	.72
(Post-Program to Follow-Up)	6.38 (1, 52)	.01	.25	.70
Internal Job Satisfaction				
(Pre- to Post-Program)	4.19 (1, 52)	.05	.17	.52
(Pre-Program to Follow-Up)	7.50 (1, 52)	.01	.27	.77
(Post-Program to Follow-Up)	1.23 (1, 52)	.27	.25	.20
Work-Family Conflict				
(Pre- to Post-Program)	12.42 (1, 52)	.00	.33	.93
(Pre-Program to Follow-Up)	46.31 (1, 52)	.00	.68	1.00
(Post-Program to Follow-Up)	11.74 (1, 52)	.00	.33	.92

N = 53

Table 42 shows the results of the simple contrasts comparing the mean outcomes of stress scores across time. Significant differences were found between pre- and post-program as well as pre-program and follow-up for both *Internal Job Satisfaction* (note p = .05) and *Work-Family Conflict*. For *External Job Satisfaction*, only pre-program to follow-up was significant suggesting that these changes developed over a longer period of time than for the other outcomes of stress. Both *External Job Satisfaction* and *Work-Family Conflict* showed significant differences between post-program and follow up time intervals. Effect sizes ranged from small to medium and power was varied, ranging from 52% for *Internal Job Satisfaction* pre- to post-program to 100% for *Work-Family Conflict* pre-program to follow-up (refer to Table 42). The mean scores for these outcomes of occupational stress were then examined to determine the direction of change over time. These results are presented in Table 43.

Table 43: Ranges, Means and Standard Deviations (SD) for Outcomes of Occupational Stress across Three Time Intervals

	Range	Time 2 Pre-Program Mean (SD)	Time 3 Post-Program Mean (SD)	Time 4 Follow-Up Mean (SD)
External Job Satisfaction	8 – 56	37.72 (7.21) [a]	38.16 (6.89) [a]	40.10 (8.21) [b]
Internal Job Satisfaction	7 – 49	34.67 (6.76) [a]	35.93 (6.47) [a]	37.74 (7.89) [b]
Work-Family Conflict	1 – 6	3.60 (0.89) [a]	3.29 (0.90) [a]	3.00 (0.87) [b]

[a]N = 55, [b]N = 53

Table 43 displays the means and standard deviations for the outcomes of occupational stress at each of the three time intervals. The mean outcome scores presented in Table 37 suggest that levels of satisfaction tended to increase from before to after the program and that these changes were maintained over time, and that feelings of conflict between the work life impinging on the home life tended to decrease from before to after the program, and these changes were also maintained over time. Although there was no statistically significant differences between *External Job Satisfaction* from pre- to post-program nor between *Internal Job Satisfaction* from post-program to follow up (see Table 42), Table 43

shows a general trend for feelings of *Job Satisfaction* to increase over these time periods. These changes to the outcomes of occupational stress over the three time intervals are clearly illustrated in Figures 13 to 15 below.

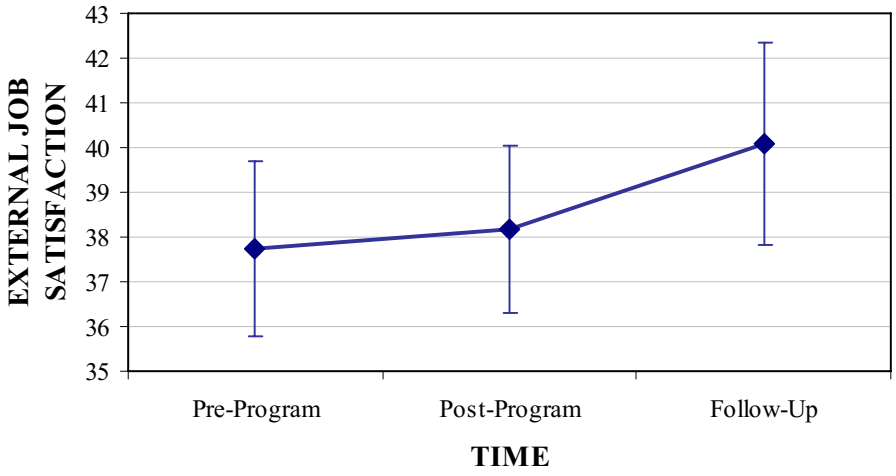

Figure 13: Mean External Job Satisfaction at the Three Time Intervals

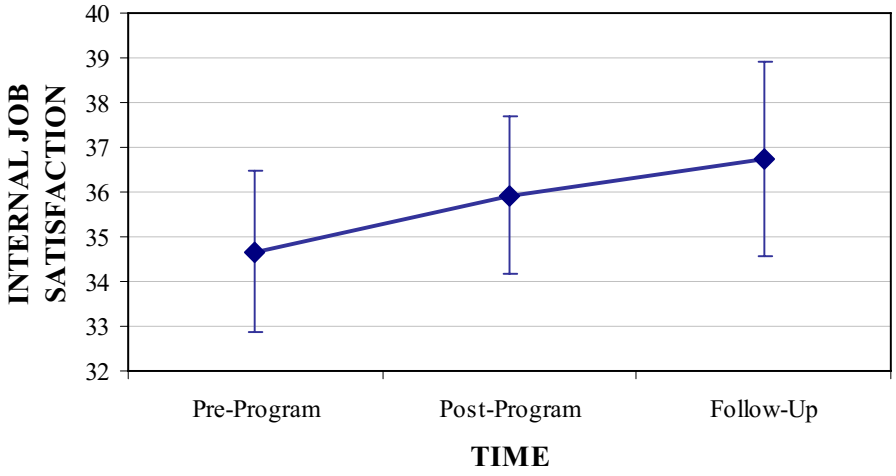

Figure 14: Mean Internal Job Satisfaction at the Three Time Intervals

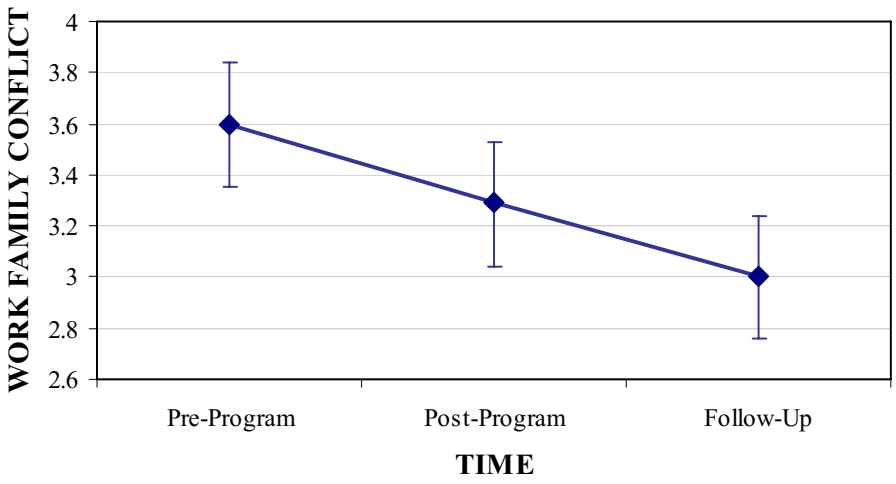

Figure 15: Mean Work-Family Conflict at the Three Time Intervals

Figures 13 to 15 are diagrammatic representations of the mean outcomes of stress (*Job Satisfaction* and *Work-Family Conflict*) scores at each of the three time intervals. Figures 13 and Figure 14 each illustrate an increase in *Job Satisfaction* over the three time intervals. Each of the pre- to post-program, the pre-program to follow-up and the post-program to follow up satisfaction scores increase, with each of these increases being statistically significant, with the exception of *External Job Satisfaction* from pre- to post-program and *Internal Job Satisfaction* from post-program to follow up which show an upward trend, but are not statistically significant differences (see Table 42). Figure 15 illustrates a decrease in feelings of *Work-Family Conflict* from pre- to post-program, as from pre-program to follow-up, as well as from post-program to follow-up. These decreases were found to be statistically significant (see Table 42). Overall, these findings suggest that the EI training program had the effect of increasing teachers' levels of satisfaction and decreasing feelings of conflict between the work and the family life from before to after program completion and that these levels continued to change in the same direction across time (as evidenced by the follow-up period).

10.3.6 Objective 5: Exploration of the Relationship Between Changes in EI and Changes in Occupational Stress, Strain and Outcomes of Stress

10.3.6.1 Bivariate Analysis

Correlations were performed to determine whether a relationship existed between the changes in EI (pre- to post-program) and the changes in occupational stress, employee strain and outcomes of stress (pre- to post-program). Change scores were calculated by creating 'difference' variables for each of these dimensions (for instance, the change in *Emotional Recognition and Expression* from pre- to post-program was calculated by taking the difference between scores pre- to post-program). Note that only the stress, strain and outcomes of stress which showed significant change from before to after the training program were included in this analyses (refer to Table 33, Table 37 and Table 41). The results of these analyses are presented in Table 44 below.

Table 44 shows the correlations between the changes in EI (from pre- to post-program) and the changes in occupational stress, strain and outcomes of stress (from pre- to post-program). Changes in three of the EI dimensions significantly correlated with the changes in *Role Overload*: *Emotional Management, Emotional Control* and *Total EI*, such that higher scores on these EI dimensions were related to lower scores on this facet of occupational stress. Change in *Understanding Emotions* was the only EI dimension to correlate significantly with changes in *Role Ambiguity*, whereby participants who reported being able to understand the emotions of others in their work environment, also reported less feelings of ambiguity associated with their job. Finally, changes in both *Emotional Management* and *Total EI* were significantly associated with changes in *Role Boundary*, such that teachers who reported higher levels of *Emotional Management* and *Total EI* tended to report less stress in terms of understanding the boundaries of their position. In terms of employee health (strain), changes in *Emotional Management* were associated with changes in *Psychological Health*, and changes in *Emotional Management, Emotional Control* and *Total EI* were significantly correlated with changes in *Physical Health*, whereby higher levels of EI were related to lower levels of ill-health (i.e. greater feelings of well-being).

Table 44: Correlations between Changes in Emotional Intelligence (Pre- to Post-Program) and Changes in Occupational Stress, Strain and Outcomes of Stress (Pre- to Post-Program)

	ERE (Change)	UE (Change)	EM (Change)	EC (Change)	Total EI (Change)
Role Overload[b] (Change)	-.18	-.03	-.30*	-.44**	-.30*
Role Ambiguity[b] (Change)	-.13	-.33*	-.11	-.05	-.19
Role Boundary[b] (Change)	-.06	-.12	-.28*	-.25	-.30*
Psychological Strain[b] (Change)	-.21	-.01	-.34**	-.37**	-.22
Physical Strain[b] (Change)	-.26	-.21	-.40**	-.29*	-.33*
External JS[a] (Change)	.26	.26	.38**	.35**	.42**
Internal JS[a] (Change)	.30*	.36**	.40**	.37**	.49**
Work-Family Conflict[a] (Change)	-.38**	-.01	-.35**	-.44**	-.39**

[a]N = 55, [b]N = 54; *p<.05; **p <.01; *Note*: (Change) = post-program score minus pre-program score; ERE = Emotional Recognition and Expression; UE = Understanding Emotions; EDC = Emotions Direct Cognition; EM = Emotional Management; EC = Emotional Control; JS = Job Satisfaction.

As shown in Table 44 above, a number of significant correlations emerged between the changes in EI and the outcomes of stress. Changes in each of the four dimensions of EI (as well as *Total EI*) significantly correlated with changes in *External* and *Internal Job Satisfaction* (with the exception of *Emotional Recognition and Expression* and *Understanding Emotions* which only related to *Internal Job Satisfaction*). This suggests that the changes in EI, from pre- to post-program, were associated with changes in feelings of satisfaction towards the organisation whereby higher levels of EI are associated with

higher levels of job satisfaction. Changes in each of the dimensions of EI (with the exception of *Understanding Emotions*) were related to changes in feelings of *Work-Family Conflict*. Participants who had greater changes in their EI scores, also showed greater changes in their feelings of conflict between the work and home life, whereby higher EI scores were associated with less feelings of conflict.

CHAPTER 11:
STUDY 2: DISCUSSION

11.1 Introduction

Understanding the importance of EI in the workplace is a major area of interest to researchers and practitioners alike. Recently EI has been purported to play a role in variables such as leadership, occupational stress, job satisfaction and organisational commitment (Abraham, 2000; Barling et al., 2000; Carmeli, 2002; Gardner & Stough, 2002; Palmer et al., 2001; Slaski & Cartwright, 2002). Although many claims have been made as to the efficacy of developing EI training programs (Bachman et al., 2000; Hunt & Evans, 2004; Jordan et al., 2002; Schutte et al., 2001; Schutte et al., 2002), very few studies have systematically studied and evaluated EI development programs.

The important role that emotions play in the occupational stress process is just beginning to be recognised and the impact and consequences of occupational stress are just beginning to be understood. The existence of high levels of occupational stress in the teaching profession signals a need to develop suitable interventions to reduce the occurrence and consequences of stress. The negative outcomes of stress on the individual as well as the consequences for the organisation are well documented (see Study 1 of this thesis), despite this, individuals are often left with the difficult task of managing occupational stress themselves. The overall aim of this study was to train teachers to understand the stress process and how to manage emotions that arise from the experience of occupational stress, in order to provide them with tools to assist them in dealing with the negative consequences of occupational stress.

11.2 Development and Implementation of an Emotional Intelligence Training Program

The first stage of Study 2 involved the development of an EI training program and the concurrent development of a standardised training manual that would ensure the consistent

delivery of the training program across a number of different groups of teachers. The process of developing the EI training program involved a series of stages. Firstly, a review of the literature relating to occupational stress (Chapter 2) and EI (Chapter 3) was conducted. These fields were reviewed separately given the relative absence of literature linking the two. The causes and consequences of occupational stress were outlined and an understanding of the role of emotions in this process was highlighted. The emergence of a relatively new construct in psychology, EI, was explored and recent research linking EI to aspects of the work environment was investigated. A gap in the literature emerged at the stage of linking EI to the occupational stress process (including stressors, strains and outcomes of stress). Study 1 of this thesis therefore sought to empirically test these relationships to provide a rationale for the development of the EI training program. The outcome of Study 1 was that a relationship existed between facets of occupational stress and dimensions of EI and between strains arising from the experience of stress and EI. The results of Study 1 provided the basis for the development of the EI training program.

The next stage in the development of the EI training program was to evaluate programs in the literature which sought to teach employees about emotions and about learning to change emotions or emotional behaviour. Only one study existed, to date, which had sought to train EI in employees and so an investigation of training programs in the areas of empathy training, anger management and conflict management was undertaken. These training programs were examined based on their efficacy, content, strategies used, format and duration. The rationale behind this approach was that the active ingredients of empirically supported emotion and emotional management training programs could be synthesised into an EI training program. Certain elements emerged from reviewing previous training programs that were pertinent to include in the EI training program developed in Study 2. These included: education specific to occupational stress and EI; group training rather than individual training; skills training in the form of group interaction and shared experiences; and the provision of exercises to complete outside the training sessions. Additionally, it was decided that the EI training program would be limited to five sessions to fit in with the time constraints of the participants and of this thesis.

Next, identification of how to structure the EI training program was undertaken (see Section 9.1.2 for more detail). The hierarchical model of EI outlined by Mayer and Salovey (1997) provided the foundation for the content of each of the training sessions, with EI presented in the 'order' which these two authors believed it developed (i.e. in the EI training program *Emotional Recognition and Expression* was presented first, *Understanding Emotions* second, *Emotional Management* third, and *Emotional Control* last). Specific learning goals were set for each session and resource material was written and collated. Finally, a training manual was written (Appendix 4) to ensure the standardised delivery of the program (see Sections 9.1.2 and 9.1.3).

The final stage prior to evaluation of the EI training program was the implementation of the program. Teachers were selected as the target occupation for the EI training program (see Section 8.6) due to the overwhelming literature on the prevalence of occupational stress and ill health as a consequence of stress within this occupation. Teachers were recruited from the primary, secondary and tertiary education sectors in Melbourne (Victoria, Australia) and its surrounding suburbs.

An important aspect of the research design of the EI training program was the implementation of two waves of the program which allowed for multiple baseline testing (two pre-program measures). The training program also provided two post-program measures, which made it possible to examine if changes immediately after the program were maintained over time. This design allowed for 'Hawthorne' effects to be controlled.

This thesis initially involved the general exploration of the relationship between EI and occupational stress (both theoretically and empirically), followed by a thorough evaluation of an EI training program in terms of changes in EI, occupational stress and stress outcomes. The retention rate in attendance of the EI training program and in completion of the questionnaires were high, reflecting the desire and willingness of teachers to be involved in this type of training program. Overall, the results are promising in terms of improvement in dimensions of EI and positive employee outcomes (decreased stress and ill-health, increased satisfaction and commitment) immediately after participation in the EI

training program, and at the follow-up period, suggesting that these changes were maintained over time. The remainder of this chapter will provide a detailed discussion of the findings of Study 2.

11.1 Preliminary Evaluation

The preliminary evaluation phase of Study 2 involved a general exploration of EI, occupational stress and health in the teachers who participated in the EI training program. This involved; 1) exploring whether EI, stress, strain and outcomes of stress were related to the demographic characteristics of age, number of days absent, number of hours worked per day, gender, and length of time employed at the current school; 2) exploring the level of EI and amount of occupational stress in the three types of teachers (primary, secondary and tertiary); and 3) exploring the levels of strain and the outcomes of stress in the three types of teachers (primary, secondary and tertiary). These factors were investigated because of their importance in terms of understanding the work environment and behaviour of teachers. The investigation of these demographic factors and characteristics of teachers (in terms of EI, stress and strain) strengthen the rationale for the continued development and implementation of training programs for teachers.

11.3.1 General Exploration of Emotional Intelligence, Occupational Stress and Employee Strain in Teachers

11.3.1.1 Age

A relationship was found in Study 2 between the age of the teachers who participated in the EI training program and one of the outcomes of stress (*Family-Work Conflict*). Teachers who reported feeling that their family life interfered with their work life also tended to be older than those teachers who did not report this conflict. This finding was inconsistent with previous literature examining age and family-work conflict. Frone (2000) reported a negative correlation between family-to-work conflict and age, which suggests that as age increases, workers tend to report less conflict from the family life to the work life. A limitation of the paper by Frone was that the data used was collected from 1990 – 1992, and potentially the demands of the workplace and the family may have changed since that time.

In a more recent study, Stoeva, Chiu and Greenhaus (2002) reported no relationship between family-to-work conflict and age. However, this finding may be attributed to the fact that over half of the participants in the study by Stoeva et al. were under 30 years of age, which might mean that their finding was not representative of the greater employed population. Therefore there currently exists no agreement as to the exact nature of the relationship between *Family-Work Conflict* and age, which presents an interesting area for future research.

There were no significant relationships between age and any of the other outcomes of stress, nor between age and EI, occupational stress or employee strain. The lack of a relationship between these variables and age was consistent with previous research by Cooper et al. (2001) who noted that very few studies have observed a consistent link between burnout (an extreme form of psychological strain, resulting from prolonged exposure to occupational stress) and age. With regard to EI, Mayer, Caruso and Salovey (1999) reported a relationship between EI and age, however they examined the development of EI from early adolescence to young adulthood and not differences between early, middle and late adulthood. The teachers who participated in Study 2 of this thesis had an average age of 43.6 years, with the age range being 24 to 66 years. This group is not comparable to the participants in the study by Mayer et al. and as such may account for why this study found no relationship between EI and age in adulthood. This finding suggests that if EI develops with age, as reported by Mayer et al., then perhaps the 'natural' development of EI reaches a ceiling whereby the individual then needs to actively seek to develop these dimensions through training programs.

11.3.1.2 Number of Days Absent from Work in the Past 6 Months

No relationship was found in Study 2 between the number of days absent from work (due to illness) in the previous six months and EI, occupational stress, employee health or outcomes of stress. This finding corresponds to previous studies investigating workplace absenteeism. In a group of primary school teachers, Galloway et al. (1984) reported no relationship between the number of days absent from work and overall stress and job satisfaction. These authors did report a significant correlation between psychological health

and the number of days absent but warned that the correlation was low and that it did not provide an adequate basis for judgement of the greater employed population. Similarly, Evans and Steptoe (2002) did not find any of their variables (including job strain, work hassles, and job support) related to sickness absence. Although aligning with previous research, this finding could also provide information about the demands placed upon teachers. Potentially teachers may not take days off work throughout the school year due to the pressures and demands placed upon them in terms of their workload. This finding presents an opportunity for researchers who are interested in the relationship between workload pressure and absenteeism, particularly with regard to the number of days taken off due to illness versus days needed off due illness (that are not taken due to workload demands).

11.3.1.3 Average Number of Hours Worked Per Day

A number of significant relationships were found between the average number of hours the teachers worked per day and EI, occupational stress and outcomes of stress in Study 2. Specifically, *Emotional Recognition and Expression, Role Overload, Responsibility* and *Work-Family Conflict* were related to the average number of hours worked per day. Although no literature exists examining EI and hours worked, the current study found a positive relationship between these two variables, suggesting that teachers who were able to recognise their own emotions and express those emotions to others tended to work longer hours than the teachers who did not report being able to recognise and express their emotions. This finding may reflect recognition of the emotional consequences of leaving early, such as guilt when one arrives home or anxiety due to the tasks that will need to be completed the next day. As such, teachers who are able to recognise the negative emotions that may arise from leaving earlier might be more likely to choose not to leave earlier, and therefore be more likely to work longer hours. Alternatively this finding could suggest that teachers who report having a high level of EI tend to work longer hours because they enjoy work more and can deal with the work environment (emotionally) more effectively than teachers who do not report a high level of EI, and as such may not avoid working longer hours.

Two facets of occupational stress, *Role Overload* and *Responsibility*, were positively related to the number of hours worked per day. In this group of teachers, those who felt overloaded with work and who felt a sense of responsibility for their colleagues tended to work longer hours than those who did not report experiencing these feelings. This finding supports the work of Tytherleigh et al. (2005) who reported that higher levels of stress were associated with longer working hours. Upon understanding the meaning of *Role Overload* and *Responsibility* it is not surprising that each of these facets of stress were related to longer working hours. In contrast to the other four facets of occupational stress (*Role Insufficiency, Role Ambiguity, Role Boundary* and *Physical Environment*) these two facets contain elements which could lead to teachers feeling that it is necessary to spend more time at work. For example, feelings of *Role Overload* could lead to teachers working longer hours in order to complete tasks, and feelings of *Responsibility* for others could lead to teachers staying back longer to assist and support colleagues or needing to work longer hours in order to make up for time lost during the work day due to helping others with tasks.

Finally, *Work-Family Conflict* was also positively related to the number of hours worked per day, which suggests that teachers working longer hours felt that their work life impacted on their family life in a negative way, compared to the teachers who worked less hours. A similar result was reported in Frone (2000) who found that the number of hours worked per week was related to an increase in feelings of conflict between the work and family life.

11.3.1.4 Gender

Three significant relationships were found between EI, occupational stress, outcomes of stress and gender. Specifically, *Understanding Emotions* was higher for females, *Role Insufficiency* was higher for males, and *Internal Job Satisfaction* was higher for females. Goleman (1998) suggested that women are often more attuned than men to the feelings of others, a theory which was supported in this study with females reporting higher levels of understanding their colleagues' emotions than males.

In terms of occupational stress, the male teachers scored higher on feelings of insufficiency (feeling as though their training, education and skills were not appropriate for the tasks they were being given to do) than the female teachers. As outlined by Skues and Kirkby (1999) there has been a limited amount of research in the area of gender differences and stress and therefore it has been difficult to come to any firm conclusions as to the differences in male and female experience of stress. However, Skues and Kirkby note that it is reasonable to conclude that gender differences in work stressors would exist, a suggestion that is supported in the current study for one of the facets of occupational stress. Perhaps it is due to the changing nature of the teaching work environment that male teachers do not feel as sufficient to perform the tasks they are required to complete. Schools are now required to incorporate new content and approaches into curriculum and to develop new educational programs and teaching practises (IEU, 2002). Secondly, identified stressors for teachers include relationships between staff and students (IEU), perhaps it is due to the increasing need to understand and 'counsel' students that results in male teachers in particular reporting feelings of insufficiency when they evaluate how they feel about their ability to perform their job. The changing nature of the work environment in schools presents an interesting opportunity for future research.

Finally, female teachers tended to be more satisfied with the internal aspects of their job than did the male teachers. *Internal Job Satisfaction* focused on aspects of work such as the individual's level of responsibility, their chance for promotion, and the amount of variety in their job. The finding from the current study suggests that female teachers tended to feel more satisfied with the level of responsibility they had within the school, with their chances for promotion, and with the amount of variety they had in their work, compared to the male teachers. This result is consistent with the study by Bond, Punnett, Pyle, Cazeca and Cooperman (2004) who reported that females tend to score higher than males on measures of job satisfaction. Again this result might be attributed to the reason outlined above, such that due to the changing nature of the teaching work environment, male teachers are feeling increasingly less sufficient to perform tasks required, which might lead to feelings of decreased job satisfaction (for example male teachers may feel less likely to obtain a promotion due to feelings of insufficiency).

11.3.1.5 Length of Time Employed At Current School

The current study did not find any relationship between the length of time a teacher was employed at their current school and EI, occupational stress, employee health or outcomes of stress. Whilst no previous literature has examined these relationships, these results might be indicative of a lack of opportunity for personal development in teachers once they are employed within the school system. Regardless of the amount of time the teacher had been employed in the current school, their level of EI, stress, health and outcomes of stress (satisfaction, commitment, work-family conflict) did not tend to change. Therefore teachers with more years of experience (in their current school) tended to report similar levels of these variables as teachers who were new to the school.

As highlighted by Travers and Cooper (1993) a high proportion of the teachers in their study (1,790 teachers assessed) were actively considering leaving the profession (66.4%) and a large proportion were currently seeking alternative employment (27.6%) or premature retirement (13.3%). The findings of the current thesis in which teachers reported similar levels of EI, stress and ill health, regardless of how long they had been employed within their school, together with the results of Travers and Cooper, add further weight to the necessity of employee training programs within this occupation group, with the hope that such programs might improve teacher satisfaction, well-being and retention.

11.3.1.6 Summary

Study 2 examined the impact of the demographic characteristics of teachers on EI, occupational stress, employee health, and outcomes of stress. The findings of this section are as follows: 1) older teachers appeared to experience more conflict between their family life and their work life to the extent that they reported the family life was negatively impacting on their work life; 2) the number of days absent from work due to illness in the previous six months had no impact on any of the variables of this study; 3) teachers who worked longer hours tended to report higher levels of *Emotional Recognition and Expression*, they also tended to suffer more from feelings of *Role Overload, Responsibility* and *Work-Family Conflict*; 4) female teachers reported a higher level of being able to understand the emotions of their colleagues and students and also reported stronger feelings

of satisfaction with aspects of their job, in contrast, male teachers reported feeling more insufficient in terms of their skills and training required to complete tasks compared to females; and 5) the length of time the teacher had been employed in their current school had no impact on any of the variables of this study. Together these findings contribute to the understanding of the abilities and behaviours of teachers in the workforce. They also provide valid information that can be used to inform the development of employee training programs.

11.3.2 General Exploration of Emotional Intelligence and Occupational Stress in Different Types of Teachers

11.3.2.1 Emotional Intelligence

No significant differences in EI were found between the three types of teachers (primary, secondary and tertiary). Currently no literature exists that has examined difference in EI across teacher types; however on the basis of the findings in this study it is argued that there is no significant difference in the levels of EI between primary, secondary and tertiary teachers.

11.3.2.2 Occupational Stress

The current study found statistically significant differences between two of the facets of occupational stress (*Role Overload* and *Role Insufficiency*) across the different teacher types. Post hoc analyses revealed that tertiary teachers scored significantly lower on *Role Overload* than did primary or secondary school teachers. This finding indicates that tertiary teachers did not tend to feel as though their workload was as excessive, unreasonable or unsupported as the primary and secondary teachers. Conversely, tertiary teachers scored significantly higher on the measure of *Role Insufficiency* compared to primary teachers, which indicated that the tertiary teachers in this group tended to feel as though there was a poor fit between their skills and the job they were required to do and that their needs for recognition and success may not be being met.

Borg (1990) noted in his review on occupational stress in the British education system that generally no significant differences are reported between primary and secondary school teachers in terms of stress, which is in line with the findings of the present study. Unexpectedly, in this study the tertiary teachers scored lower on *Role Overload* than the primary and secondary school teachers. Both Gillespie et al. (2001) and Tytherliegh et al. (2005) report work overload as a major source of stress for tertiary (university) staff, although neither of these studies included other teacher types (primary or secondary) as a comparison group. However, it should be noted that the tertiary staff were experiencing slightly higher levels of *Role Overload* than the comparative normative population (Osipow, 1998), which aligns with the findings of Gillespie et al. and Tytherliegh et al. that tertiary staff do experience high levels of work overload. Similar to the work of Gillespie et al., tertiary teachers were found to experience high levels of insufficiency (including experiencing insufficient recognition and reward). In a number of studies reviewed by Borg, investigating the sources of stress for primary and secondary school teachers, the most common sources fell into the categories of work overload and ambiguity, with lack of support or recognition not being cited as a major stressor for these types of teachers. The combined results of Gillespie et al. and Borg support the findings of the present study in terms of the level of *Role Insufficiency* experienced by the different teacher types.

11.3.2.3 Summary

Study 2 explored whether there were differences in the levels of EI and occupational stress for primary, secondary and tertiary teachers. The findings of this section are as follows: 1) no differences were found between primary, secondary or tertiary teachers in terms of their levels of EI; 2) primary and secondary school teachers reported greater feelings of work overload in comparison to tertiary teachers, and tertiary teachers reported greater feelings of insufficiency compared to primary teachers. Together these two findings contribute to understanding of the level of EI and the major stressors of primary, secondary and tertiary school teachers. These findings also provide important information that can be used to inform the development of EI training programs.

11.3.3 General Exploration of Employee Strain and Outcomes of Stress in Different Types of Teachers

11.3.3.1 Employee Strain

There were no significant differences found in Study 2 between primary, secondary and tertiary school teachers on measures of employee strain (as measured by *Psychological Health* and *Physical Health*), however, each of the teacher types scored higher on measures of psychological ill-health than in previous occupational studies (Banks et al., 1980). Although no difference existed between the three teacher types, this result is consistent with previous research which has persistently found primary, secondary and tertiary teachers all suffer from poor levels of psychological and physical health (IEU, 1996; Louden, 1987; Travers & Cooper, 1993; Winefield et al., 2002).

11.3.3.2 Outcomes of Stress

Three outcomes of stress were assessed in the current thesis: *Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*. No significant differences were found between primary, secondary or tertiary teachers on the measure of *Job Satisfaction*, however, some differences were found in levels of *Organisational Commitment* and *Work-Family Conflict*. Tertiary teachers scored significantly lower on the measure of *Organisational Commitment* than either primary or secondary teachers. This finding suggests that tertiary teachers are less committed to and feel less loyalty towards their school than primary or secondary school teachers, although it should be noted that the tertiary teachers scored in the average range of commitment to the organisation (Mowday et al., 1979). Therefore, although the tertiary teachers scored lower on commitment than did the primary or secondary teachers, they were still within the range considered to be 'average' in terms of feelings of commitment towards the employing organisation, suggesting that the tertiary teachers did report some feelings of commitment to their university.

Primary teachers who participated in this study scored significantly higher on the measure of *Work-Family Conflict* than did tertiary teachers, although both groups scored above the average for the normal population (Frone & Yardley, 1996). Primary school teachers

reported that their work life was impacting negatively on their family life, more so than tertiary teachers. In a large study of both primary and secondary teachers Kyriacou and Pratt (1995) reported that the most frequently mentioned outcome of stress was being unable to relax and switch off after the work day, supporting the results of this study which indicate that primary teachers feel that their work impacts negatively on their home life.

11.3.3.3 Summary

Study 2 sought to explore whether there were differences in the experience of strain (ill-health) or in the outcomes of stress (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*) for primary, secondary and tertiary teachers. The findings of this section are as follows: 1) no differences were found between primary, secondary or tertiary teachers in terms of their experience of strain, although collectively these groups scored higher on the measure of psychological strain that in a comparative occupational group; 2a) no differences were found between the three teacher types on *Job Satisfaction*; 2b) tertiary teachers reported less commitment to their school than either primary or secondary teachers, although tertiary teachers were still in the 'average' range for commitment; and 2c) primary teachers reported more conflict between their work life and their family life than tertiary teachers, although both of these groups scored above average in comparison to normative data on general employees. Together these findings contribute to our understanding of the impact of occupational stress has on primary, secondary and tertiary school teachers.

11.4 Evaluating the Emotional Intelligence Training Program

11.4.1 Introduction

The evaluation of the EI training program was a significant part of this thesis. The training program was evaluated in terms of changes in EI, occupational stress, strain (*Psychological Health* and *Physical Health*) and outcomes of stress (*Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*). These variables were measured immediately after teachers completed the EI training program, as well as 5-weeks after completion of the training program. The design of the analyses in the evaluation of the training program

consisted of pre- to post-program within subject comparisons. Currently, there is little information as to the effectiveness of EI training programs in the scientific literature, particularly in terms of the participants in this program (teachers) and the number of variables in the assessment of the program, to which the findings of this study can be compared. Limited comparisons can be made, however, to training programs in the fields of conflict and anger management, empathy training and stress management. Overall the findings of Study 2 demonstrate the effectiveness of the EI training program in terms of improving levels of EI, decreasing feelings of stress and strain and improving the outcomes of stress, both initially and in the 5-week follow-up time period. The results of the EI training program are discussed in-depth below.

11.4.2 Emotional Intelligence

The first variables used to evaluate the efficacy of the EI training program were the four EI dimensions: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*, and *Total EI*. In Study 2, *Emotional Recognition and Expression* measured the teacher's self-reported ability to recognise emotions within themselves and to accurately express those emotions to others within the workplace; *Understanding Emotions* measured the ability of teachers to understand the emotions of those within their workplace; *Emotional Management* measured the extent to which the teachers were able to manage both positive and negative emotions within themselves and in others; and finally, *Emotional Control* measured the ability of the teachers to control very strong emotions experienced at work. At the outset of Study 2, it was hypothesised that the level of EI would increase following participation in the EI training program. The results obtained in the evaluation of the training program support this hypothesis. Each of the four EI dimensions increased pre- to post-program, a trend which continued from post-program to the follow-up time period. When reliable change analyses were taken into account, a high percentage of teachers who participated in the EI training program showed reliable improvement in the four EI dimensions both immediately after the program had concluded and at the follow-up time point. It is therefore probable that the components of as well as participation in the EI training program were responsible for this increase in EI in these teachers.

The improvements in the four EI dimensions in this study are able to be explained within the context of the initial objectives which were the basis of the development of the EI training program. The training program developed in this thesis aimed to educate teachers about EI and thereby empower them as employees to understand EI behaviours in the workplace; to train the teachers in the skills of using EI so as to enable them to more effectively deal with the emotions they experience in day-to-day teaching; to encourage collegiate support in learning how to utilise EI most effectively; and encourage practice and reinforcement of skills learned through the provision of comprehensive training manuals and take-home exercises. It is therefore argued that these characteristics of the EI training program contributed to the significant improvements in EI that were experienced by the teachers.

An interesting finding in the evaluation of the EI training program is that the changes the teachers made in terms of increasing their levels of EI continued over the follow-up period, that is, from immediately after the program to the follow-up time point the teachers EI skills continued to develop without active participation in training sessions. This finding can be explained by one of the initial objectives of the EI training program which was to provide the teachers with exercises to complete outside the training sessions to enable practice of the skills learned in each session. Howells et al. (2005), in an anger management training program, noted that their program was only successful at the educational level because it did not include the opportunity for participants to practise their skills. One way to overcome this limitation is to provide participants with exercises to complete outside training sessions, which serve to reinforce the skills learned in each session. A second way to overcome this limitation is to provide participants with comprehensive training manuals which can be referred to after the program has finished and which therefore serve as a resource for continued learning and development. Both of these ideas were incorporated into the EI training program in this thesis, which may explain why teachers continued to develop their EI skills even after the training program was completed.

Currently EI training program research is extremely limited, particularly research adopting a multi focussed approach to training (as was the case in this thesis with the focus being EI,

stress and strain). However, a small number of programs exist in scientific literature which investigate changing or teaching control of emotions, the findings of which can be related to the changes in EI observed in the current study. In the only published study on implementing and evaluating an EI training program, Slaski and Cartwright (2003) found an increase in EI after program completion, a finding which is supported by the results of this study. Flury and Ickes (2001) theorised that empathy could be learned by individuals, a theory which was empirically tested by Shapiro et al. (2004). Shapiro et al. reported that participants in their training program were able to increase their levels of empathy, a finding which is further supported in this study with increases in understanding the emotions of others (which incorporates empathetic characteristics) from before to after the training program. Rose and West (1999) evaluated an anger management training program and reported that participants were able to successfully reduce and control expressions of anger. In line with these findings, the current study found that teachers were more able to recognise and control their emotions after the training program. Finally, Lau et al. (2004) assessed a conflict-management training program and reported improvements in self awareness and emotional recognition after program completion. Similarly, the current study found improvements in emotional recognition after the EI training program. Collectively, these studies provided the basis for the overall aim of Study 2, such that emotions and emotional behaviour could be learned and developed. The EI training program presented in this thesis was effective in increasing teachers' levels of EI and provides further empirical support for the notion that emotional responses and behaviours can be learned, developed and controlled by employees.

11.4.3 Occupational Stress

The second set of variables used to evaluate the efficacy of the EI training program were six facets of occupational stress: *Role Overload, Role Insufficiency, Role Ambiguity, Role Boundary, Responsibility* and *Physical Environment*. In Study 2, *Role Overload* measured the extent to which job demands exceeded resources and the ability to accomplish given workloads, *Role Insufficiency* measured the extent to which the teacher's training, education and skills were appropriate to job requirements, *Role Ambiguity* measured the extent to which priorities, expectations and evaluation criteria were clear to the teacher,

Role Boundary measured the extent to which the teacher was experiencing conflicting role demands and loyalties, *Responsibility* measured the extent to which the teacher had, or felt, a great sense of responsibility for others, and *Physical Environment* measured the extent to which the teacher was exposed to extreme physical conditions. At the beginning of Study 2, it was hypothesised that the teachers' perceived level of occupational stress would decrease following participation in the EI training program. The results obtained in the evaluation of the training program partially supported this hypothesis. Three of the six facets of occupational stress decreased after program completion (*Role Overload, Role Ambiguity* and *Role Boundary*), a trend which continued from post-program to the follow-up time point. No change pre- to post-program or pre-program to follow-up was found for the facets *Role Insufficiency, Responsibility* or *Physical Environment*. When reliable change analyses were taken into account, a number of teachers who participated in the EI training program showed a reliable reduction in these three facets of occupational stress variables both immediately after the program had concluded and at the follow-up time point.

The finding of a decrease in occupational stress was expected due to the fact that components of the training program were drawn from previously evaluated effective stress-management programs (such as the incorporation of stress reducing relaxation exercises). Secondly, in order to maintain the focus of the training program on dealing with emotions experienced in times of stress, the teachers were trained to recognise and understand stress triggers and responses before they learnt how to deal with the emotions arising from these experiences, and it could be that this educational component of the training program (recognising and understanding stress triggers and responses) also assisted in the decreased feelings of stress reported by the teachers.

Kagan et al. (1995) and Lindquist and Cooper (1999) report that stress-management programs which include physiological exercises, lifestyle education components, employee management exercises and self understanding exercises are effective in reducing occupational stress in employees. The EI training program evaluated in this thesis included aspects of the exercises suggested by Kagan et al. and Lindquist and Cooper (for example, progressive muscle relaxation, breathing exercises, diet evaluation and improvement of

interpersonal awareness), which may have contributed to the reported decrease in feelings of stress upon completion of the EI training program. Secondly, Nytro et al. (2000) outlined the key factors in implementing successful stress-management training programs. These authors suggested that a climate that learns from failure, a multi-level participatory program and clear definition of the roles and responsibilities throughout the training program are crucial to program success. Each of these suggestions was adopted in the development and running of the EI training program in this thesis, which may also account for the decreases in occupational stress after the program was complete.

Although a number of researchers have successfully implemented or evaluated stress management training programs (for example, Kagan et al., 1995; Lindquist & Cooper, 1999; Rahe et al., 2002; Sharkey & Starples, 2003), the focus of this thesis was slightly different from traditional stress management programs in that the aim of the training program implemented here was to train employees on EI and teach them to utilise these skills to assist them in dealing with the consequences of stress more effectively. To further add to the efficacy of this program the educational component included information on the causes and consequences of stress and lifestyle management, the skills training component included exercises on recognising stressors in the school, and the collegiate support component included sharing perceived stressors and 'brainstorming' as a group different ways to deal with stressors. As a result the experience of occupational stress tended to decrease after program completion and it is argued that the characteristics of the EI training program mentioned above, which were drawn from research evaluating the efficacy of traditional stress management programs, contributed to the significant reduction in particular facets of occupational stress that were experienced by the teachers.

The aim of the EI training program was to teach the teachers how to deal with the negative emotions which arise from the experience of occupational stress, however, it is probable that the stress educational component of the training program was the cause of the decreased feelings of occupational stress, and may not have been due to the fact that the teachers felt more able to deal with the emotions arising from stress. Therefore, it may be that the educational component of this program, which included skills training in terms of

recognising stress and collegiate support in terms of assisting colleagues in times of stress, accounts for the decrease in occupational stress from before to after the training program. In order to examine this further, future research would need to compare programs run with and without the stress educational component in order to evaluate the impact of this component of the training program on feelings of occupational stress, and therefore whether it is teaching employees to deal with emotions more effectively (the EI component) that reduces feelings of stress or whether it is the stress education component that reduces feelings of stress.

Despite the success of the EI training program in reducing three of the facets of occupational stress, three of the facets of occupational stress did not change following participation in the EI training program: *Role Insufficiency, Responsibility* and *Physical Environment*. *Role Insufficiency* examines the appropriateness of the individual's skills, education and training to the job they are required to perform (Osipow, 1998). Although the EI training program did not significantly change feelings of *Role Insufficiency* over the time period of the program, it is possible that the training program had the effect of increasing teacher's skills (in certain areas) but that these changes may take longer to be reported by teachers. For instance, it might not be until they have the opportunity to implement the skills developed in the EI training program throughout the course of a school term, semester or year that they will report feeling more confident with their skills, education and training. In this instance, a longer follow up period would be necessary, which was lacking in the current thesis. A reason for *Responsibility* not decreasing following participation in the training program might be due to the fact that the role of teachers is such that they feel a sense of responsibility for the performance and welfare of others (particularly their students) in the school. Decreasing feelings such as these was not the aim of the training program, and indeed may not be appropriate for this occupational group. Finally, the facet of *Physical Environment* did not significantly decrease following participation in the EI training program, a finding which may be attributed to the type of program offered to teachers. In terms of the stress management techniques offered in the training program and evaluated in this thesis, they can be categorised under the banner of secondary prevention (see Cooper & Cartwright, 1997; Cooper et al., 2001). Secondary prevention focuses on the

detection and management of experienced stress by increasing awareness and improving the stress management skills of the individual employee through training and educational activities and is often preventative in nature. However, this type of stress prevention training does not necessarily remove the actual stressor which could account for why the perception of stress resulting from poor physical working conditions (such as poor heat / air control, dirty classrooms and equipment breakdowns) did not change after implementation of the EI training program. This presents a potential limitation of this program in terms of its stress reducing ability.

11.4.4 Employee Strain

The third domain that was assessed to evaluate the EI training program in the current study was employee strain (specifically, *Psychological Health* and *Physical Health*). In Study 2, *Psychological Health* referred to the psychological components of ill health (employee strain) and *Physical Health* referred to the physical components of employee strain (the physical symptoms experienced as a result of increased stress). At the outset of Study 2, it was hypothesised that the level of *Psychological* and *Physical Health* would decrease following participation in the EI training program. The results obtained in the evaluation of the training program supported this hypothesis. Both *Psychological* and *Physical Health* decreased pre- to post-program, a trend which also continued from post-program to the follow-up time period. When reliable change analyses were investigated, a high percentage of teachers who participated in the EI training program showed reliable improvement in *Psychological* and *Physical Health* (i.e. a reliable decrease in ill health) both immediately after the program had concluded and at the follow-up time point. As with the changes in EI and occupational stress, the reduction in employee strain that was evident after participation in the EI training program could be attributed to the initial objectives that informed the development of the training program. Included in the stress educational component of the training program was information regarding the consequences of stress in terms of health and well-being. The teachers participating in the training program were given the opportunity to understand how stress adversely effects mental and physical health and were provided with exercises to assist them in managing their health more effectively (for example, diet and exercise evaluation). It is argued that these objectives may have

contributed to the decrease in employee strain that was found in this thesis. It could also be that the combination of sharing emotional experiences and learning to manage negative emotions more effectively (to reduce their impact in terms of resulting in negative health), coupled with the employee interaction and collegiate support that arose throughout the EI training program contributed to teachers feeling better psychologically, resulting in decreased feelings of psychological ill-health.

The expectation of a decrease in employee strain was based in part on the work of Slaski and Cartwright (2003) and Rahe et al. (2002). In their EI training program, Slaski and Cartwright reported a significant decrease in psychological strain (ill-health) six months after completion of the EI training program. These authors did not include a data collection point immediately after their training program, and therefore only the follow-up data from the current thesis can be compared to the study by Slaski and Cartwright. In light of this, the current findings support the results presented by Slaski and Cartwright such that the participants in the EI training program implemented in the current thesis showed a decrease in strain at the follow-up data collection time point. In terms of physical strain, Rahe et al. (2002) evaluated a stress management training program in terms of its ability to decrease physical strain (ill-health). These authors included educational sessions (on the topic of occupational stress) as well as wellness sessions in their stress management program and reported that participant's levels of strain decreased after program completion. The results of the current thesis supports this finding in that educational and wellness information were included in the EI training program and the outcome was such that strain was reduced after program completion. However, it is also argued, as highlighted above, that the EI components of the training program (such as learning how to manage emotional reactions more effectively) also contributed to teachers having lower levels of ill-health as they were more capable of identifying, understanding and managing emotions and therefore more likely to deal with negative emotions and not let those emotions affect their health and well-being.

11.4.5 Outcomes of Stress

Study 2 sought to explore the impact of the EI training program on three measurable outcomes of stress: *Job Satisfaction, Organisational Commitment* and *Work-Family Conflict*. Significant changes were found in *External Job Satisfaction* (pre-program to follow-up), *Internal Job Satisfaction* (pre- to post-program and pre-program to follow-up), and in *Work-Family Conflict* (pre- to post-program and pre-program to follow-up). No significant changes were found for *Organisational Commitment* or *Family-Work Conflict*.

Although a number of correlational studies exist documenting the relationship between occupational stress and outcomes of stress (see Section 2.3 of this thesis for a detailed overview), very few studies have examined changes in these outcomes after participation in an employee training program. LaMontagne (2001) outlined a quality management program which showed increases in employee job satisfaction upon completion of an employee training program, similarly, Cormack, Nichols and Walsh (1991) reported increased levels of job satisfaction in university staff in England following the implementation of a structured support network. Whilst these findings are different in methodology compared to the current thesis, the results are similar in terms of the increase in *Job Satisfaction* upon completion of the training program. Secondly, the significant changes in *Job Satisfaction* from before to after completion of the EI training program may have resulted from specific components of the program. For instance, throughout the training program teachers were encouraged to share their own experiences (with regard to stress and emotion) and to draw on the experiences of others to assist them in managing their own stress and dealing with their own emotions. They were also encouraged to be more attentive to the emotions of others and were taught to be more empathetic of others during times of stress. Babakus, Cravens, Johnston and Moncrief (1999) indicated that emotional exhaustion (a state of depleted energy caused by excessive emotional demands) is linked to lowered levels of job satisfaction, therefore, it may be that the EI components of the training program contributed to their being able to deal with and manage their emotions more effectively, and therefore promoted a sense satisfaction within the employees (in terms of feeling happier about their work environment and more empowered to manage

their work environment) which led to the increase in levels of *Job Satisfaction* after completion of the program.

The finding of a decrease in feelings of conflict between the work life and the family life (whereby work was not interfering with family life as frequently) is similar to the results of a stress management program evaluated by Horan (2002). Horan reported that employees who had participated in a 9-week stress intervention group (consisting of reading inspirational stories and sharing one's own stories) felt less pressure of work when they were at home after completion of this program. Again, this study is markedly different in methodology to the training program offered in the current thesis, however, the results of Horan are supported in that teachers in the EI training program in this study reported less interference of work to their family life. No literature exists examining the relationship between EI development and changes in *Work-Family Conflict*, however, Carmeli (2002) hypothesised that emotionally intelligent employees should be capable of preventing work-family conflict because their high EI allows them to recognise the emotions which arise from spending more time at work than at home (for example, guilt, anxiety, frustration), allowing them to better manage these emotions and improve their decision making in regards to time spent with family and at work. Therefore, it is argued that by training teachers on how to recognise their emotions during times of stress (when they may be more likely to experience work demands which might then impact on their family life) that they are more able to recognise when feelings of conflict arise between the work and family life and are more able to manage this conflict.

Interestingly the changes in *Job Satisfaction* and *Work-Family Conflict* continued over time, such that feelings of satisfaction continued to increase and feelings of conflict between the work and family life continued to decrease even in the absence of the training sessions (i.e. post-program to follow-up). No empirical evidence exists to support this finding and as such it is hypothesised that the components of the EI training program, particularly the structure of group sessions rather than individual development, the encouragement of collegiate support throughout learning and development, and the encouragement of continual practice and reinforcement of the skills learned throughout the

training program, coupled with the content of training teachers how to deal with and manage their emotions more effectively account for these findings.

No significant changes were found for *Organisational Commitment* or *Family-Work Conflict*. These results may be attributed to the content and the focus of the EI training program. The EI training program focused on the stressors evident within the schools and ways teachers could better deal with the consequences of these stressors (adopting a secondary prevention approach). A limitation of secondary prevention is that the stressors themselves are not completely removed from the environment and therefore even after program completion, some stressors will still exist. If these stressors are organisational in nature, such as rate of pay, class sizes, lack of resources, difficult students, and do not change after completion of the program then individual feelings of commitment towards the school also may not change, resulting in no change in levels of *Organisational Commitment*. The utilisation of a secondary prevention methodology is a limitation of this thesis. The finding of no significant change in *Family-Work Conflict* could be due to the fact that the EI training program did not allocate time to discussing the impact of the family life on the work life (instead, discussion was limited to the impact of work life on family life). This presents a limitation of the EI training program which could be overcome in future research.

11.4.6 The Relationship between Changes in Emotional Intelligence, Occupational Stress, Strain and Outcomes of Stress

The EI training program developed and evaluated in this thesis differed to traditional programs of stress management in that the program aimed to equip employees with the skills necessary to deal with the emotions that arise from feelings of stress and to train them to use these skills to manage feelings of stress, health strains and behaviours which are impacted by stress (such as job satisfaction). In order to examine the relationship between changes in EI scores to changes in stress, strain and outcomes of stress, difference scores (post-program score minus pre-program score) were calculated for each of the variables in Study 2. Although there exists some controversy as to the use of difference scores, Colvin,

Block and Funder (1996) argue that difference scores provide statistically valid and psychologically meaningful results. Using these change (difference) scores a number of significant correlations emerged amongst the variables.

Changes in scores on *Emotional Recognition and Expression* were significantly related to changes in *Internal Job Satisfaction* as well as *Work-Family Conflict*. This finding suggests that participants in the EI training program who reported an improvement in their level of *Emotional Recognition and Expression* also reported greater feelings of *Internal Job Satisfaction* and less conflict between the work and family life from before the program began to after program completion. Therefore it could be argued that those employees who felt that they were more able to recognise their own emotions and express those emotions to others (from pre- to post-program) were then also more able to identify feelings of satisfaction and feelings of conflict and might deal with these feelings more effectively due to being able to recognise them more accurately.

Similarly, changes in *Understanding Emotions* was associated with changes in *Internal Job Satisfaction* and also one of the facets of occupational stress: *Role Ambiguity*. This finding suggests that employees in the training program who reported an improvement in their ability to understand the emotions of others in the workplace, also reported a change in their feelings of *Role Ambiguity* such that they reported greater clarity in terms of knowing what their priorities are, what is expected of them, and the manner in which they will be evaluated (from pre- to post-program). In Study 1 of this thesis *Understanding Emotions* was found to be a significant predictor of *Role Ambiguity*, which, coupled with the findings of the EI training program in Study 2, suggests that increasing employees' ability to understand the emotions of others in the workplace assist them in managing feelings of ambiguity as to what is required and expected of them from others.

Changes in both *Emotional Management* and *Emotional Control* were related to a number of the changes in variables in Study 2 (pre- to post-program). Changes in both of these EI dimensions were associated with the changes in *Role Overload, Psychological Health, Physical Health, Job Satisfaction* (both *External* and *Internal*), and *Work-Family Conflict*.

Additionally, changes in *Emotional Management* were also associated with changes in *Role Boundary*. Reported improvements in the ability to manage positive and negative emotions in oneself and others and in the ability to control strong emotions in the workplace were significantly associated with reported changes in strain, whereby less strain was reported at post-program compared with pre-program. Perhaps it is the ability to manage emotions as they arise which assists in preventing feelings and symptoms of ill-health. As noted by Spector and Goh (2001) employees who 'bottle up' or suppress emotions might create psychological and physical problems within themselves due to this suppression. The experience of negative emotions in the workplace, if not managed adaptively by the individual, has been linked to heart disease (Greenglass, 1996) and to the suppression of the immune system (O'Leary, 1990). Furthermore, the continual experience of negative emotions in the workplace, if left unchecked, is likely to play a large psychological role manifesting in behaviours such as withdrawal and in changes of attitudes about the organisation and its people (Spector & Goh). As reported in Study 1 of this thesis, *Emotional Management* was found to be a significant predictor of *Psychological Health*, and *Emotional Control* was found to be a significant predictor of both *Psychological* and *Physical Health*. Together the findings from Study 1 and Study 2 suggest that the changes in *Emotional Management* and *Emotional Control* contributed to the changes in feelings of strain whereby increases in these EI dimensions assisted employees in managing and preventing the experience of strain.

Changes in *Role Overload* were associated with changes in *Emotional Management* and *Emotional Control*, and changes in *Role Boundary* were associated with *Emotional Management*. Spector and Goh (2001) suggested that an employee who feels in control of a situation is likely to appraise it differently to an employee who lacks this feeling of control. Whilst Spector and Goh were evaluating the experience of occupational stress, this suggestion can be extrapolated to EI. An employee who feels emotionally in control of a situation which elicits a strong emotion (as stressful situations tend to) might be more likely to be able to manage that situation, than an employee who does not feel a sense of emotional control, and who would therefore report less feelings of occupational stress. If this is the case, then improving an employee's ability to manage and control the emotions

they experience at work (as was the aim and outcome of the EI training program) may help them better deal with aspects of occupational stress. This could account for the finding that changes in these two EI dimensions were associated with changes in occupational stress, such that the employees in the training program, through utilising components of EI, felt more able to deal with the emotions that arise from the experience of stress which enabled them to deal with the stressor more effectively and in turn report less feelings of stress.

Overall it is argued that the significant changes in EI (from pre- to post-program) contributed to the significant changes in stress, stain and outcomes of stress. Specifically, the changes in EI that were reported as a result of participating in the EI training program had the effect of enabling employees to manage their feelings of stress more effectively (leading to a reduction in some of the facets of stress) and to manage their emotions more effectively to prevent health strains and to maintain positive attitudes about their workplace.

11.4.7 Summary

The results of the EI training program evaluated in this thesis suggest that the program was effective in improving teachers' levels of EI, in decreasing their feelings of occupational stress, strain and work-family conflict, and in improving their overall feelings of satisfaction with their job. These improvements can be attributed to the overall initial objectives of the EI training program, including: educating teachers about EI and thereby empowering them as employees; training the teachers in the skills of using EI so as to enable them to effectively deal with the emotions experienced in day-to-day teaching; encouraging collegiate support in learning how to utilise EI effectively; and encouraging practice and reinforcement of skills learned through the provision of comprehensive training manuals and take-home exercises. The results obtained are consisted with previous research pertaining to employee training programs. The improvements made in the variables assessed in the EI training program were sustained over a period of time after completion of the program and suggest that the skill development that was initiated during the training program continued even after completion of the program. It is argued that through training employees on utilising EI in the workplace that aspects of stress, strain and

outcomes of stress were influenced, such that increases in EI led to decreases in some aspects of stress, decreases in feelings of ill-health and to improvements in feelings of satisfaction towards the workplace. Interestingly no significant changes were found for levels of commitment after participation in the training program, however this finding may be attributed to the focus of the training program. Overall, the findings of Study 2 demonstrated the effectiveness of the EI training program in improving EI and outcomes of stress, and in reducing occupational stress and strain, thus highlighting the benefits of employee training programs which focus on the experience of emotion in the workplace.

11.5 Limitations of Study 2

This study contained several limitations which may have affected the results of the evaluation of the EI training program. The first limitation of Study 2 was that the follow-up period was relatively short in duration (5 weeks) and therefore may not be an accurate assessment of sustained change. The timeline of a short follow-up in this thesis was necessary due to the school year coming to an end and the necessity of teachers to have fully completed their participation in the program prior to report writing and the student examination period. This presents an opportunity for future research to include assessment at a longer time period to further investigate sustained change. Although the time period for the follow-up assessment was relatively short in duration, continued changes were evident in each of the variables assessed in this study, suggesting that these teachers were continuing to develop their skills even in the absence of the program.

A second limitation of this study was that only a small number of teachers were included from each of the different schools in the program. Whilst this had the effect of controlling for within group bias and allowed three different types of school teachers to be involved (primary, secondary and tertiary), it could be more effective to enrol an entire school, department or faculty in the training program in order to encourage collegiate support and assistance beyond the training sessions. This could also have the effect of changing the overall culture of a school and presents an interesting opportunity for further research.

The focus of the EI training program developed in this thesis, in terms of the components which concentrated on occupational stress, fell into the category of secondary prevention. Secondary prevention stress management programs have been criticised due to the fact that they reflect 'damage limitation' (Cooper et al., 2001) in that they address the outcomes rather than the sources of strain. The use of secondary prevention techniques in the EI training program may account for why all of the facets of occupational stress did not decrease following participation in the training program. Although the focus of this program was not stress eradication, one way to improve the program would be to incorporate primary prevention strategies (reducing the actual stressors in the work environment) which have been suggested to overcome the limitations of secondary prevention techniques (Cooper et al.).

Although being limited in a number of ways, the results of Study 2 are valuable and provide one of the first comprehensive development, implementation and evaluation studies of an EI training program. The limitations presented in this study are common to training programs and whilst researchers and practitioners need to be aware of them, their impact is not significant enough to discredit the findings of the EI training program.

11.6 Conclusion

The overall aim of Study 2 was to develop, implement and evaluate an employee EI training program. The EI training program, incorporating education and skills training within a shared learning framework, was shown to be an effective training program in terms of improving teachers' levels of EI and in reducing feelings of occupational stress and the experience of psychological and physical strains. These improvements were shown to be reliable and presented immediately after the completion of the training program and were sustained at the follow-up time point. In terms of the outcomes of occupational stress, teachers showed an increase in feelings of satisfaction with their job and a decrease in feelings that their work life was impacting negatively on their family life. Again, these changes were evident after completion of the training program and continued to be

sustained at the follow-up time point. It is argued that the changes in EI (made from pre- to post-program) contributed to the changes in stress, strain and outcomes of stress.

Overall, Study 2 of this thesis illustrates that training programs focussed on the emotional experiences of employees can successfully engage employees and support and assist them in dealing with occupational stress and the consequences of stress (in terms of health and attitudes). This study drew from literature in the areas of empathy, anger and conflict management and linked training techniques from these areas to training in EI dimensions. The linking of these training courses demonstrates the theoretical contribution of this thesis.

The results of Study 2 showed that the EI training program developed as part of this thesis was successful in improving the level of EI of teachers, providing support for the notion that EI can be learned and developed. The findings of this study are encouraging and suggest that further controlled research in the areas of EI and occupational stress are warranted and necessary. Despite the limitations of this study (presented above), the importance of employee training programs centred on dealing with emotions in the workplace should not be underestimated and future research should focus on implementing EI training programs to different occupational groups. Based on the findings of this study it is concluded that EI training programs have the potential to significantly improve EI in teachers and provide them with skills to manage the experience and the consequences of occupational stress.

CHAPTER 12:
CONCLUSION

The current thesis investigated the relationship between EI and occupational stress and evaluated the effectiveness of an EI training program in a group of employees. A number of research aims were identified and examined throughout this thesis. The overall aim of Study 1 was to empirically examine the relationship between EI, stressors, strains (health) and outcomes of stress. These relationships were investigated due to the lack of literature examining the role of EI in the occupational stress process, particularly literature including both stressors and strains. They were also examined to identify whether particular dimensions of EI would be useful to develop in employees. Questionnaires were administered to 320 employees and a series of statistical analyses were conducted to investigate the aims of this study. The results of Study 1 indicated that four dimensions of EI were particularly important in the occupational stress process: *Emotional Recognition and Expression, Understanding Emotions, Emotional Management* and *Emotional Control*. Employees who reported feeling in control of their emotions in the workplace and who reported knowing how to deal with emotions effectively were less likely to report feelings of occupational stress. Similarly, employees who were adept at using and managing their emotions in the workplace were less likely to report suffering from ill health (psychological and physical) and were more likely to report high levels of job satisfaction and organisational commitment. Collectively the results of Study 1 provided a rationale for the development of an EI training program, a program to teach employees how to utilise the dimensions of EI more effectively in the workplace and how to deal with the negative emotions that arise from the experience of occupational stress.

The aim of Study 2 in this thesis was to develop, implement and evaluate an EI training program which had an emphasis on stress management. Specifically, Study 2 aimed to train employees to understand the stress process, to understand the behaviours underpinning the dimensions of EI, and to teach employees how to manage the emotions that arise from the experience of occupational stress. The implementation of Study 2 was conducted in a number of stages. Firstly, literature encompassing occupational stress and EI was reviewed

and an examination into the relationship between EI and stress was undertaken (Study 1). Secondly, emotional learning and development programs were investigated and evaluated in terms of their effectiveness to obtain desired outcomes. Thirdly, the structure for the program was identified and training manuals collated. Finally, the EI training program was implemented to employees and the efficacy of the program was statistically evaluated. The results demonstrated the effectiveness of the EI training program in terms of improving EI, decreasing feelings of stress and strain, and improving the outcomes of stress, both immediately after completion of the program and at the follow-up time period. The EI training program evaluated in this thesis illustrated that training programs focussed on the emotional experiences of employees are able to successfully engage employees and can support and assist them in dealing with experience of occupational stress and the consequences of stress. Furthermore, the results of Study 2 demonstrated that the EI training program was successful in improving the employee's level of EI, providing support for the theory that EI can be learned and developed. Study 2 argued that the changes in EI scores, from pre- to post-program attributed to the changes in feelings of stress, strain and outcomes of stress. Specifically it was argued that by improving EI, employees are likely to be better able to manage stress, strain and the outcomes of stress.

Overall the results of this thesis highlight the existence of a relationship between EI and occupational stress. As suggested by Lazarus (1999) stress and emotions are interdependent - where there is stress there is emotion, therefore it is important to understand the value of being able to effectively manage emotions at work, particularly those that arise from the experience of occupational stress. The construct of EI provides an opportunity to systematically evaluate the impact of managing emotions on the experience of occupational stress. Spector and Goh (2001) suggested that focussing on emotions in the workplace may enhance employee well-being, similarly, Slaski and Cartwright (2003) suggested that EI training programs could result in resilience to occupational stress. The development and implementation of an EI training program, in this thesis, demonstrated that behaviours underpinning the dimensions of EI can be learned and that training focussed on the emotional experiences of employees in the workplace can be effective in improving employee well-being and in decreasing feelings of occupational stress. Finally, this thesis

make a significant theoretical contribution to this area of research by demonstrating the link between EI and stress in the workplace and the link between training programs focused on emotion and emotional behaviours (such as programs targeting empathy, anger and conflict management) and the development EI.

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APPENDIX 1

Study 1: Information Sheet, Consent Form and Questionnaire

Information Sheet

Dear Colleague,

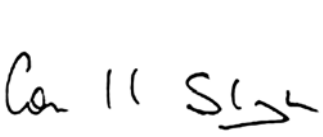
The Organisational Psychology Research Unit at Swinburne University is examining the relationship between emotional intelligence, occupational stress and employee health. Over the last few years there have been many claims that emotional intelligence is a key ability in individual life satisfaction, effective leadership and performance. Emotional intelligence may be defined as the ability to recognise our own emotions and the emotions of others, the ability to understand those emotions and the ability to use those emotions effectively.

Although there have been a number of claims that emotional intelligence is crucial to individual success there have been very few studies that have actually examined this relationship in the workplace. In particular the role emotional intelligence may play in assisting employees to deal with occupational stress has not been explored.

In order to fully understand the role of emotional intelligence in occupational stress and to help us create effective programs to develop emotional intelligence in individuals, Swinburne University are collecting self-report data on the constructs. Your input would be extremely valuable to us and if you decide to participate you will need to complete the enclosed questionnaire which should take approximately 45 minutes, place it into the enclosed reply paid envelope and mail it back to Swinburne University. Your results will remain confidential and will not be provided to any person or organisation apart from the project investigators. When answering the questions please be honest so that your scores will be a true reflection of your thoughts and behaviours. You will receive individual feedback of your own scores on the dimensions of emotional intelligence. Once this report has been sent to you, your name will be removed from the database.

Thank you for your time, should you have any enquires, please contact Lisa Gardner on 9214 5782 or lgardner@swin.edu.au

Yours sincerely,



Professor Con Stough Lisa Gardner

Consent Form

Emotional Intelligence and Occupational Stress

CONSENT FORM

I, _____ agree to participate in the project titled "The role of emotional intelligence in occupational stress and psychological health, and the impact of these variables on other workplace factors" to be conducted by Professor Con Stough and Lisa Gardner. I have understood the requirements of this study and any questions I have asked have been answered to my satisfaction.

My participation is completely voluntary and I understand that I may withdraw at any time and that any individual information that is provided by any participant in this study will not be provided to any other body. I understand that the data from the entire sample may be published in an international peer review journal, but no individual person will be identified.

Signature _____

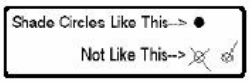
Date _____

If you feel that there are any ethical matters that have not been resolved by the chief investigator Professor Con Stough, you may contact:

The Chair
Human Research Ethics Committee
Swinburne University
PO Box 218
Hawthorn, Vic, 3122
Ph: (03) 9214 5223

Questionnaire

Emotional Intelligence and Occupational Stress



Please answer each question on this form. Print information in the boxes provided. Please answer questions with 'bubbles' by completely filling in the bubble that corresponds with your answer.

Name

Company you work for

Position (eg; consultant)

Age

Gender

- O Male
- O Female

Number of people financially dependant on you

- O 0
- O 1 - 2
- O 3 - 4
- O 4 or more

Living Arrangements

- O Living alone
- O Living with partner only
- O Living with partner and others
- O Living with one or more people (not partner)

Level of Education

- O Completed High School Certifica
- O Completed Tertiary Certificate
- O Completed Undergraduate Degree
- O Completed Postgraduate Degree

How long have you been with this company?

- O Under 6 months
- O 6 months - 1 year
- O Between 1 and 5 years
- O More than 5 years

Number of employees you super

Average number of days you have been absent from work in the past 6 months

On average, how many hours a day do you work?

The most accurate assessment is gained from people who respond to the statements honestly. Therefore it is essential that you are truthful about yourself, and that you do not answer in a way that you think sounds good or acceptable. In general, try not to spend too long thinking about responses. Most often the first answer that occurs to you is the most accurate. However, do not rush your responses or respond without giving due consideration to each statement.

Please read each statement carefully. For each statement, fill in the circle which fits you best.

Shade Circles Like This--> ●

Not Like This--> ⊗ ✓

	① rarely/never true	② occasionally true	③ often true	④ usually true	⑤ true most of the time
1. At work I am expected to do too many different tasks in too little time.	①	②	③	④	⑤
2. I feel that my job responsibilities are increasing.	①	②	③	④	⑤
3. I am expected to perform tasks on my job for which I have not been trained.	①	②	③	④	⑤
4. I have to take work home with me.	①	②	③	④	⑤
5. I have the resources I need to get my job done.	①	②	③	④	⑤
6. I'm good at my job.	①	②	③	④	⑤
7. I work under tight time deadlines.	①	②	③	④	⑤
8. I wish that I had more help to deal with the demands placed upon me at work.	①	②	③	④	⑤
9. My job requires me to work in several equally important areas at once.	①	②	③	④	⑤
10. I am expected to do more work than is reasonable.	①	②	③	④	⑤
11. My career is progressing about as I hoped it would.	①	②	③	④	⑤
12. My job fits my skills and interests.	①	②	③	④	⑤
13. I am bored with my job.	①	②	③	④	⑤
14. I feel that I have enough responsibility on my job.	①	②	③	④	⑤
15. My talents are being used on my job.	①	②	③	④	⑤
16. My job has a good future.	①	②	③	④	⑤
17. I am able to satisfy my needs for success and recognition in my job.	①	②	③	④	⑤
18. I feel overqualified for my job.	①	②	③	④	⑤
19. I learn new skills in my work.	①	②	③	④	⑤
20. I have to perform tasks that are beneath my ability.	①	②	③	④	⑤
21. My supervisor provides me with useful feedback about my performance.	①	②	③	④	⑤
22. It is clear to me what I have to do to get ahead.	①	②	③	④	⑤
23. I am uncertain about what I am suppose to accomplish in my work.	①	②	③	④	⑤
24. When faced with several tasks I know which should be done first.	①	②	③	④	⑤
25. I know where to begin a new project when it is assigned to me.	①	②	③	④	⑤
26. My supervisor asks for one thing, but really wants another.	①	②	③	④	⑤
27. I understand what is acceptable personal behaviour on my job (eg. dress, interpersonal relations).	①	②	③	④	⑤
28. The priorities of my job are clear to me.	①	②	③	④	⑤
29. I have a clear understanding of how my boss wants me to spend my time.	①	②	③	④	⑤
30. I know the basis on which I am evaluated.	①	②	③	④	⑤
31. I feel conflict between what my employer expects me to do and what I think is right or proper.	①	②	③	④	⑤
32. I feel caught between conflicts at work.	①	②	③	④	⑤
33. I have more than one person telling me what to do.	①	②	③	④	⑤
34. I know where I fit in my organisation.	①	②	③	④	⑤
35.I feel good about the work I do.	①	②	③	④	⑤

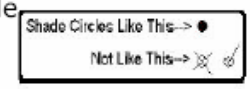
Please read each statement carefully. For each statement, fill in the circle which fits you best.	Shade Circles Like This--> ● Not Like This--> ⊗ ✓	○ rarely/never tr	○ occasionally tr	○ often true	○ usually true	○ true most of th
36. My supervisors have conflicting ideas about what I should be doing.		①	②	③	④	⑤
37. My job requires working with individuals from several departments or work areas.		①	②	③	④	⑤
38. It is clear who really runs things where I work.		①	②	③	④	⑤
39. I have divided loyalties on my job.		①	②	③	④	⑤
40. I frequently disagree with individuals from other work units or departments.		①	②	③	④	⑤
41. I deal with more people during the day than I prefer.		①	②	③	④	⑤
42. I spend time concerned with the problems others at work bring to me.		①	②	③	④	⑤
43. I am responsible for the welfare of subordinates.		①	②	③	④	⑤
44. People on-the-job look to me for leadership.		①	②	③	④	⑤
45. I have on-the-job responsibility for the activities of others.		①	②	③	④	⑤
46. I worry about whether people who work for/with me will get things done properly.		①	②	③	④	⑤
47. My job requires me to make important decisions.		①	②	③	④	⑤
48. If I make a mistake in my work, the consequences for others can be pretty bad.		①	②	③	④	⑤
49. I worry about meeting my job responsibilities.		①	②	③	④	⑤
50. I like the people I work with.		①	②	③	④	⑤
51. On my job I am exposed to high levels of noise.		①	②	③	④	⑤
52. On my job I am exposed to high levels of wetness.		①	②	③	④	⑤
53. On my job I am exposed to high levels of dust.		①	②	③	④	⑤
54. On my job I am exposed to temperature extremes.		①	②	③	④	⑤
55. On my job I am exposed to bright light.		①	②	③	④	⑤
56. My job is physically dangerous.		①	②	③	④	⑤
57. I have an erratic work schedule.		①	②	③	④	⑤
58. I work all by myself.		①	②	③	④	⑤
59. On my job I am exposed to unpleasant odors.		①	②	③	④	⑤
60. On my job I am exposed to poisonous substances.		①	②	③	④	⑤

Below are a series of statements, please fill in the circle containing the number that is most indicative of the way you typically think, feel and act at work.

Shade Circles Like This--> ●
Not Like This--> ⊗ ✓

	Never	Seldom	Sometime	Usually	Always
1. I can tell how colleagues are feeling at work.	①	②	③	④	⑤
2. I generate positive moods and emotions within myself to get over being frustrated at work.	①	②	③	④	⑤
3. Examination of feelings is useful in solving work related problems.	①	②	③	④	⑤
4. When I'm anxious I can remain focused on what I am doing.	①	②	③	④	⑤
5. I can tell whether colleagues like each other or not.	①	②	③	④	⑤
6. When I'm under stress, I tend to get irritated by colleagues.	①	②	③	④	⑤
7. I find it difficult to talk about my feelings with my colleagues.	①	②	③	④	⑤
8. I find it hard to determine how a colleague is feeling from their body language alone.	①	②	③	④	⑤
9. Difficult situations at work elicit emotions in me that I find hard to overcome.	①	②	③	④	⑤
10. Colleagues find it easy to pick-up on how I am feeling.	①	②	③	④	⑤
11. I find it difficult to keep from getting stressed-out when I am under a lot of pressure at work.	①	②	③	④	⑤
12. My moods and emotions help me generate new ideas.	①	②	③	④	⑤
13. I can tell how a colleague is feeling by the tone in their voice.	①	②	③	④	⑤
14. When I am anxious at work, I find it difficult to express this to my colleagues.	①	②	③	④	⑤
15. I find it easy to influence the moods and emotions of clients.	①	②	③	④	⑤
16. I don't easily pick-up on the emotional overtones of workplace environments.	①	②	③	④	⑤
17. I can tell when a colleague is trying to hide their true feelings.	①	②	③	④	⑤
18. I try not to let my emotions guide me when problem solving at work.	①	②	③	④	⑤
19. I find it easy to control my anger at work.	①	②	③	④	⑤
20. I can describe my feelings on an issue to colleagues.	①	②	③	④	⑤
21. I don't think it's a good idea to use emotions to guide work related decision making.	①	②	③	④	⑤
22. I find it hard to identify if a colleague is upset without them telling me.	①	②	③	④	⑤
23. I find it hard to get colleagues to cooperate with each other.	①	②	③	④	⑤
24. I come-up with new ideas at work using rational thoughts rather than my moods and emotions.	①	②	③	④	⑤
25. I find it hard to concentrate on a task when I'm really excited about something.	①	②	③	④	⑤
26. I can portray how I am feeling to colleagues through my body language.	①	②	③	④	⑤
27. I find it hard to determine who gets along and who doesn't at work.	①	②	③	④	⑤
28. I overcome conflict with my colleagues by influencing their moods and emotions.	①	②	③	④	⑤
29. I watch the way clients react to things when I'm trying to build rapport with them.	①	②	③	④	⑤
30. My problem solving at work is based on sound reasoning rather than feelings.	①	②	③	④	⑤
31. I find it difficult to think clearly when I'm feeling anxious about something at work.	①	②	③	④	⑤
32. At work, I have trouble finding the right words to express how I feel.	①	②	③	④	⑤
33. I find it difficult to get colleagues excited about things at work.	①	②	③	④	⑤
34. I can pick-up on the 'emotional tone' of staff meetings.	①	②	③	④	⑤
35. I attend to my feelings on a matter when making important work related decisions.	①	②	③	④	⑤
36. I overcome anger at work by thinking through what's causing it.	①	②	③	④	⑤
37. Colleagues know when I am worried.	①	②	③	④	⑤
38. I readily understand the reasons why I have upset someone at work.	①	②	③	④	⑤
39. I find it hard to reduce anxiety in colleagues.	①	②	③	④	⑤

Below are a series of statements, please fill in the circle containing the number that is most indicative of the way you typically think, feel and act at work.



	Never ①	Seldom ②	Sometim ③	Usually ④	Always ⑤
40. I weigh-up how I feel about different solutions to work-related problems.	①	②	③	④	⑤
41. I can be upset at work and still think clearly.	①	②	③	④	⑤
42. I find it hard to convey my anxiety to colleagues.	①	②	③	④	⑤
43. I can determine when a colleague's emotional reactions are inappropriate.	①	②	③	④	⑤
44. I find it easy to comfort colleagues when they are upset about something at work.	①	②	③	④	⑤
45. Colleague's facial expressions reveal a lot to me about the way they are feeling.	①	②	③	④	⑤
46. At work, I experience strong emotions that are hard to control.	①	②	③	④	⑤
47. Feelings should be kept at bay when making important work related decisions.	①	②	③	④	⑤
48. I readily notice the 'feel' of work environments.	①	②	③	④	⑤
49. When something gets me down I find it difficult to snap out of it.	①	②	③	④	⑤
50. I go with my 'feelings' when making important decisions at work.	①	②	③	④	⑤
51. At work, I can detect my emotions as I experience them.	①	②	③	④	⑤
52. When discussing an issue, I find it difficult to tell whether colleagues feel the same way as me.	①	②	③	④	⑤
53. Thinking about how I felt in certain situations at work helps me remember them.	①	②	③	④	⑤
54. I can easily snap out of feeling down at work.	①	②	③	④	⑤
55. I find it hard to distinguish my emotions at work.	①	②	③	④	⑤
56. I can tell when a colleague feels the same way as myself about another colleague without actually discussing it.	①	②	③	④	⑤
57. I find it difficult to maintain positive moods and emotions when I'm under stress.	①	②	③	④	⑤
58. When colleagues get worked-up I stay out of their way.	①	②	③	④	⑤
59. I find it hard to determine exactly how colleagues feel about work related issues.	①	②	③	④	⑤
60. When something goes wrong at work, I find if difficult to remain positive.	①	②	③	④	⑤
61. Colleagues can easily tell how I feel.	①	②	③	④	⑤
62. I try to keep emotions out of work related decision making.	①	②	③	④	⑤
63. I can tell when a colleague doesn't really like me.	①	②	③	④	⑤
64. When a colleague upsets me at work, I think through what the person has said and find a solution to the problem.	①	②	③	④	⑤

The following items deal with various aspects of your job. Please show how satisfied or dissatisfied you feel with each of these features of your present job by filling in the circle which fits you best.

Shade Circles Like This--> ●
Not Like This--> ⊘ ✓

	extremely dissatis	very dissatisfied	moderately dissati	not sure	moderately satisfi	very satisfied	extremely satisfie
	①	②	③	④	⑤	⑥	⑦
1. The physical work conditions.	①	②	③	④	⑤	⑥	⑦
2. The freedom to choose your own method of working.	①	②	③	④	⑤	⑥	⑦
3. Your fellow workers.	①	②	③	④	⑤	⑥	⑦
4. The recognition you get for good work.	①	②	③	④	⑤	⑥	⑦
5. Your immediate boss.	①	②	③	④	⑤	⑥	⑦
6. The amount of responsibility you are given.	①	②	③	④	⑤	⑥	⑦
7. Your rate of pay.	①	②	③	④	⑤	⑥	⑦
8. Your opportunity to use your abilities.	①	②	③	④	⑤	⑥	⑦
9. Industrial relations between management and workers in your organisation.	①	②	③	④	⑤	⑥	⑦
10. Your chance of promotion.	①	②	③	④	⑤	⑥	⑦
11. The way your organisation is managed.	①	②	③	④	⑤	⑥	⑦
12. The attention paid to suggestions you make.	①	②	③	④	⑤	⑥	⑦
13. Your hours of work.	①	②	③	④	⑤	⑥	⑦
14. The amount of variety in your job.	①	②	③	④	⑤	⑥	⑦
15. Your job security.	①	②	③	④	⑤	⑥	⑦
16. Taking everything into consideration, how do you feel about your job as a whole?	①	②	③	④	⑤	⑥	⑦

Please fill in the circle that best represents how frequently you experience each of the following situations.

Shade Circles Like This--> ●
Not Like This--> ⊘ ✓

	never	seldom	sometimes	often	very often
	①	②	③	④	⑤
1. After work, I come home too tired to do some of the things I'd like to do.	①	②	③	④	⑤
2. On the job I have so much work to do that it takes away from my personal interests.	①	②	③	④	⑤
3. My family/friends dislike how often I am preoccupied with my work while I am at home.	①	②	③	④	⑤
4. My work takes up time that I'd like to spend with family/friends.	①	②	③	④	⑤
5. My job or career interferes with my responsibilities at home (cooking, cleaning, shopping, child care)	①	②	③	④	⑤
6. My job or career keeps me from spending the amount of time I would like to spend with my family.	①	②	③	④	⑤
7. I am too tired at work because of things I have to do at home.	①	②	③	④	⑤
8. My personal demands are so great that it takes away from my work.	①	②	③	④	⑤
9. My superiors and peers dislike how often I am preoccupied with my personal life while at work.	①	②	③	④	⑤
10. My personal life takes up time that I'd like to spend at work.	①	②	③	④	⑤
11. My home life interferes with my responsibilities at work (getting to work on time, completing tasks)	①	②	③	④	⑤
12. My home life keeps me from spending the amount of time I would like to spend on job or career related activities.	①	②	③	④	⑤

Listed below are a series of statements that represent possible feelings that you may have about your school. With respect to your own feelings please indicate the extent to which you agree / disagree with the following statements.

Shade Circles Like This--> ●
Not Like This-->

	strongly disagree	moderately disa	slightly disagree	neither agree/dis	slightly agree	moderately agre	strongly agree
1. I am willing to put in a great deal of effort beyond that normally expected in order to help this school be successful.	○	○	○	○	○	○	○
2. I talk up this school to my friends as a great school to work for.	○	○	○	○	○	○	○
3. I would accept almost any type of job assignment in order to keep working for this school.	○	○	○	○	○	○	○
4. I find that my values and the school's values are very similar.	○	○	○	○	○	○	○
5. I am proud to tell others that I am part of this school.	○	○	○	○	○	○	○
6. This school really inspires the very best in me in the way of job performance.	○	○	○	○	○	○	○
7. I am extremely glad that I chose this school to work for over others I was considering at the time I joined.	○	○	○	○	○	○	○
8. I really care about the fate of this school.	○	○	○	○	○	○	○
9. For me this is the best of all possible schools for which to work.	○	○	○	○	○	○	○

Read each statement below carefully. For each statement fill in the circle with the response that best represents your opinion.

Shade Circles Like This--> ●
Not Like This-->

	strongly disagree	disagree	neutral	agree	strongly agree
1. I am not a worrier.	○	○	○	○	○
2. I like to have a lot of people around me.	○	○	○	○	○
3. I often feel inferior to others.	○	○	○	○	○
4. I laugh easily.	○	○	○	○	○
5. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.	○	○	○	○	○
6. I don't consider myself especially "light-hearted".	○	○	○	○	○
7. I rarely feel lonely or blue.	○	○	○	○	○
8. I really enjoy talking to people.	○	○	○	○	○
9. I often feel tense or jittery.	○	○	○	○	○
10. I like to be where the action is.	○	○	○	○	○
11. Sometimes I feel completely worthless.	○	○	○	○	○
12. I usually prefer to do things alone.	○	○	○	○	○
13. I rarely feel fearful or anxious.	○	○	○	○	○
14. I often feel as if I'm bursting with energy.	○	○	○	○	○
15. I often get angry at the way people treat me.	○	○	○	○	○
16. I am a cheerful, high-spirited person.	○	○	○	○	○
17. Too often, when things go wrong, I get discouraged and feel like giving up.	○	○	○	○	○
18. I am not a cheerful optimist.	○	○	○	○	○
19. I am seldom sad or depressed.	○	○	○	○	○
20. My life is fast-paced.	○	○	○	○	○
21. I often feel helpless and want someone else to solve my problems.	○	○	○	○	○
22. I am a very active person.	○	○	○	○	○
23. At times I have been so ashamed I just wanted to hide.	○	○	○	○	○
24. I would rather go my own way than be a leader of others.	○	○	○	○	○

We would like to know if you have had any medical complaints and how your health has been in general, over the past few weeks. Please fill in the circle you think most applies to you.

Have you recently:

1. Been able to concentrate on what you're doing?
   O better than usual O same as usual O less than usual O much less than usual
2. Lost much sleep over worry?
   O not at all O no more than usual O rather more than usual O much more than usual
3. Felt that you are playing a useful part in things?
   O more so than usual O same as usual O less so than usual O much less than usual
4. Felt capable about making decisions about things?
   O more so than usual O same as usual O less so than usual O much less capable
5. Felt constantly under strain?
   O not at all O no more than usual O rather more than usual O much more than usual
6. Felt you couldn't overcome your difficulties?
   O not at all O no more than usual O rather more than usual O much more than usual
7. Been able to enjoy your normal day-to-day activities?
   O more so than usual O same as usual O less so than usual O much less than usual
8. Been able to face up to your problems?
   O more so than usual O same as usual O less able than usual O much less able
9. Been feeling unhappy or depressed
   O not at all O no more than usual O rather more than usual O much more than usual
10. Been losing confidence in yourself?
    O not at all O no more than usual O rather more than usual O much more than usual
11. Been thinking of yourself as a worthless person?
    O not at all O no more than usual O rather more than usual O much more than usual
12. Been feeling reasonably happy, all things considered?
    O more so than usual O same as usual O less so than usual O much less than usual

Please indicate how often you suffer from the following physical conditions.

Shade Circles Like This--> ●
Not Like This--> ⊘ ✓

	never or hardly ever ①	rarely ②	sometimes ③	often ④	all (or nearly all) the time ⑤
1. Headaches	①	②	③	④	⑤
2. Muscle pain	①	②	③	④	⑤
3. Colds / viruses	①	②	③	④	⑤
4. Chest pain or discomfort	①	②	③	④	⑤
5. Sleeping difficulties	①	②	③	④	⑤
6. Back / neck pain	①	②	③	④	⑤
7.Tiredness	①	②	③	④	⑤
8. Skin problems	①	②	③	④	⑤
9. Gastrointestinal problems (eg, indigestion, nausea, diarrhoea)	①	②	③	④	⑤
10. Breathing difficulties	①	②	③	④	⑤
11. Feeling dizzy / lightheadedness	①	②	③	④	⑤

APPENDIX 2

Study 1: Transformation of variables

Table 45: Skewness Statistic and Transformation Applied for variables in Study 1

Variable	Skewness (Standard Error) Before Transformation	Skewness (Standard Error) After Transformation	Transformation Applied
Understanding Emotions	-.635 (.136)	-.059 (.136)	Reverse Square Root
Role Insufficiency	.569 (.136)	.269 (.136)	Square Root
Role Ambiguity	.506 (.136)	.202 (.136)	Square Root
Role Boundary	.892 (.136)	.160 (.136)	Logarithmic
Physical Environment	1.608 (.136)	.900 (.136)	Logarithmic
Psychological Health	1.073 (.136)	.227 (.136)	Square Root
Physical Health	.743 (.136)	.332 (.136)	Square Root

APPENDIX 3

Study 1: Truncated Outliers

Table 46: Raw and Truncated Scores for Univariate Outliers (Individual Cases) in Study 1

Variable	Before Truncation Raw Score (z-score)	After Truncation Raw Score (z-score)
Emotional Recognition and Expression	20.00 (-3.26)	22.00 (-2.89)
Emotional Recognition and Expression	19.00 (-3.44)	22.00 (-2.89)
Understanding Emotions	1.73 (-4.25)	2.83 (-2.86)
Role Boundary	1.69 (3.52)	1.57 (2.31)
Psychological Health	0.00 (-4.30)	1.41 (-2.34)
Physical Health	7.14 (3.61)	6.71 (2.92)

APPENDIX 4

Study 2: Emotional Intelligence Training Manual (Employee Version)

Access to this Appendix is restricted. Please contact

Lisa Gardner (lgardner@swin.edu.au) for access.

APPENDIX 5

Study 2: Information Sheet, Consent Form

Information Sheet

Dear Colleague,

The Organisational Psychology Research Unit at Swinburne University have developed a program to teach employees about emotional intelligence, how to develop these skills and how to use them to deal with occupational stress.

Over the last few years there have been many claims that emotional intelligence is a key ability in individual life and job satisfaction, effective leadership and performance. Emotional intelligence may be defined as the ability to recognise our own emotions and the emotions of others, the ability to understand those emotions and the ability to use those emotions effectively.

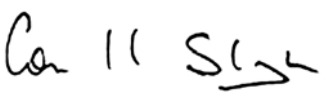
Although there have been a number of claims that emotional intelligence is crucial to individual success there have been very few studies that have actually examined this relationship in the workplace. In particular the role emotional intelligence may play in assisting employees to deal with occupational stress has not been explored.

In order to fully understand the effectiveness of an emotional intelligence development program we have developed a 5-week educational program that you are invited to participate in. Your input would be extremely valuable to us and if you decide to participate you will have the opportunity to choose a time that suits you best for attending the program. Group sessions will run once a week for 5 consecutive weeks and you will receive a comprehensive manual of the program. Week 1 will run for 2 hours 30 minutes, Weeks 2 – 4 for 2 hours each and Week 5 for 45 minutes. These sessions will be run at your own school. You will be required to complete a questionnaire (which will take approximately 50 minutes) both before and after the program and will be provided with a confidential report of your emotional intelligence scores. Please complete the enclosed questionnaire as soon as possible and post it directly back to Lisa Gardner in the reply paid envelope provided. This will enable me to have your scores ready for when we first meet.

Your individual results will remain confidential and will not be provided to any person or organisation apart from the project investigators.

Thank you for your time, should you have any enquires about the program, please contact Lisa Gardner on 9214 5782 or lgardner@swin.edu.au

Yours sincerely,



Professor Con Stough Lisa Gardner

Consent Form

Managing Occupational Stress through developing Emotional Intelligence

CONSENT FORM

I, _____ agree to participate in the project titled "Managing Occupational Stress though developing Emotional Intelligence" which is part of the larger study "The role of emotional intelligence in occupational stress and psychological health, and the impact of these variables on other workplace factors" to be conducted by Lisa Gardner and Professor Con Stough. I have understood the requirements of this study and any questions I have asked have been answered to my satisfaction.

My participation is completely voluntary and I understand that I may withdraw at any time and that any individual information that is provided by any participant in this study will not be provided to any other body. I understand that the data from the entire sample may be published in an international peer review journal, but no individual person will be identified.

Signature _____

Date _____

If you feel that there are any ethical matters that have not been resolved by the chief investigator Professor Con Stough, you may contact:

The Chair
Human Research Ethics Committee
Swinburne University
PO Box 218
Hawthorn, Vic, 3122
Ph: (03) 9214 5223

APPENDIX 6

Study 2: Truncated Outliers

Table 47: Raw and Truncated Scores for Univariate Outliers (Individual Cases) Across Four Testing Times in Study 2

Variable (Testing Time)	Before Truncation Raw Score (z-score)	After Truncation Raw Score (z-score)
Role Boundary (1)	43.00	36.00
	(3.13)	(2.25)
Psychological Health (1)	34.00	22.00
	(4.12)	(1.85)
Emotional Management (2)	18.00	19.00
	(-3.43)	(-3.25)
Role Boundary (2)	80.00	66.00
	(3.74)	(2.05)
Physical Environment (2)	72.00	63.00
	(3.97)	(2.45)
Psychological Health (2)	30.00	27.00
	(3.42)	(2.85)
Organisational Commitment (2)	1.00	1.67
	(-3.37)	(-2.85)
Physical Environment (4)	0.00	1.41
	(-4.30)	(-2.34)
Psychological Health (4)	68.00	64.00
	(3.40)	(2.83)

APPENDIX 7: Table 48: Means (SDs), F-Statistics and Effect Size (η^2) for Length of Time Employed and the Major Variables

	LENGTH OF TIME EMPLOYED AT CURRENT SCHOOL				
	Under 6 months[a] Mean (SD)	**6 months – 1 year[b]** Mean (SD)	**1 year – 5 years[c]** Mean (SD)	**Over 5 years[d]** Mean (SD)	**F (df), p value**
ERE	46.0 (-)	36.2 (5.11)	37.6 (4.39)	38.5 (6.74)	1.48 (4, 55), p= .22
UE	74.0 (-)	75.0 (6.60)	74.5 (8.86)	75.5 (7.45)	0.04 (4, 55), p= .99
EM	35.0 (-)	34.7 (5.92)	37.5 (5.74)	39.2 (5.86)	1.23 (4, 55), p= .31
EC	28.0 (-)	28.5 (5.36)	30.7 (4.75)	30.1 (5.26)	0.65 (4, 55), p= .63
Total EI	183.0 (-)	174.3 (17.52)	180.0 (18.92)	183.2 (19.65)	0.68 (4, 55), p= .61
RO	31.0 (-)	29.8 (5.04)	28.6 (7.60)	33.2 (6.79)	2.04 (4, 54), p= .10
RI	24.0 (-)	20.0 (4.86)	23.0 (6.77)	22.3 (7.99)	0.22 (4, 54), p= .93
RA	33.0 (-)	19.0 (7.87)	23.7 (6.43)	22.5 (7.09)	1.28 (4, 54), p= .29
RB	26.0 (-)	20.0 (2.53)	23.0 (6.70)	22.8 (6.76)	0.59 (4, 54), p= .67
R	31.0 (-)	25.0 (8.25)	24.8 (5.42)	29.8 (7.31)	2.08 (4, 54), p= .10
PE	16.0 (-)	14.3 (3.50)	17.2 (5.99)	17.8 (5.38)	0.59 (4, 54), p= .68
PsyH	11.0 (-)	14.8 (7.25)	12.9 (5.62)	11.4 (4.14)	0.76 (4, 54), p= .56
PhyH	33.0 (-)	26.0 (9.44)	28.2 (6.20)	26.7 (4.50)	0.71 (4, 54), p= .59
Ext JS	41.0 (-)	40.3 (4.72)	37.0 (7.96)	37.2 (7.36)	0.65 (4, 55), p= .63
Int JS	30.0 (-)	39.5 (3.56)	33.9 (5.99)	34.3 (7.67)	0.97 (4, 55), p= .43
OC	3.67 (-)	5.50 (1.31)	5.15 (1.29)	5.49 (1.36)	0.67 (4, 54), p= .62
WFC	3.67 (-)	3.31 (0.68)	3.52 (0.97)	3.79 (0.88)	0.94 (4, 55), p= .43
FWC	1.83 (-)	1.36 (0.48)	1.81 (0.61)	1.85 (0.54)	1.30 (4, 55), p= .28

[a]N=1, [b]N=6, [c]N=20, [d]N=26. *Note*: ERE=Emotional Recognition and Expression; UE=Understanding Emotions; EM=Emotional Management; EC=Emotional Control; RO=Role Overload; RI=Role Insufficiency; RA=Role Ambiguity; RB=Role Boundary; R=Responsibility; PE=Physical Environment; PsyH=Psychological Health; PhyH=Physical Health; Ext JS=External Job Satisfaction; Int JS=Internal Job Satisfaction; OC=Organisational Commitment; WFC=Work-Family Conflict; FWC=Family-Work Conflict.