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**DISPOSITIONAL COPING STYLES AND ADULT LITERACY:
EXPLORING STRESS AND COPING IN ADULT VOCATIONAL
TRAINING ENVIRONMENTS**

A thesis presented in partial fulfilment of the requirements of the degree of
Doctor of Philosophy in Psychology
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ABSTRACT

Since the publication of the International Adult Literacy Survey (IALS) findings in 1996, governments internationally have been cognisant of the need for functional literacy skill training for large segments of the New Zealand working-age population (Culligan¹, Arnold, Noble, & Sligo, 2004; Ministry of Education, 2001; OECD, 2000). Individuals with low literacy levels generally report negative prior experiences of formal learning environments that are due to and have contributed to their current functional literacy capability (for example, see Neubauer & Dusewicz, 1988; Ross, 1987, 1988; Tilley et al., 2006).

The present study aimed to systematically investigate and measure the dispositional coping styles and strategies associated with differing prose literacy capabilities. The purpose of this project was to provide an understanding of the coping-literacy relationship as a first step toward the development of coping strategy training interventions specifically targeted at improving the educational experience (current and future) of low literacy individuals. Secondary aims of the current study included exploring the relationship between persistence and coping style, adaptability, and prose literacy; determining whether and how coping styles, adaptability, and prose literacy changed over time; and, assessing the relationship between prose literacy, coping style, adaptability, and post-course goal achievement.

Fifty-six students in adult vocational programmes were interviewed pre- and post-course. At each time point assessments of dispositional coping style and strategies via use of the COPE tool (Carver, Scheier, & Weintraub, 1989) were gathered, as were measures of emotional intelligence (including adaptability), and prose literacy score. Participants also took part in a semi-structured qualitative interview which gathered information on their educational and

¹ 'Culligan' is the maiden name of the thesis author.

employment history, and goals post-course. Situational assessments of coping behaviours outside of the course were also gathered as part of a larger study for future analysis purposes and are outside the scope of this thesis. Respondents were also interviewed at three and six months post-course to determine achievement or non-achievement of post-course goals.

Low prose literacy scores were significantly associated with more frequent use of emotion-focused coping strategies (particularly avoidance). Higher prose literacy scores were significantly associated with more frequent use of problem-focused coping strategies. Indicative data showed that non-persisting participants showed higher emotion-focused coping strategy use than their persisting counterparts alongside lower prose literacy scores. Further, emotion-focused coping, adaptability, and prose literacy score were found to change significantly over time. However, post-course goal achievement was not significantly associated with any of the variables of interest except bivariately with prose literacy.

The model of transactional stress and coping (Lazarus, 1966; Lazarus & Folkman, 1984) and the control theory of self-regulation (Carver & Scheier, 1981, 2000) provided a framework for the discussion of the dispositional coping styles and strategies used by individuals of differing prose literacy ability. It was argued that a negative self-schema of the individual as a learner is developed through prior negative experiences of formal education. It was hypothesised that this negative self-schema, built from a low self-confidence and fear of educational failure and rejection, predisposed the individual to a heightened negative self-focus. This in turn was proposed to direct attention to the self and the associated emotional aspects of a response to a stressor, leading to a bias towards habitual coping strategies of avoidance and less frequent use of problem-focused strategies by this group.

These findings and the associated interpretations have implications for the future development of coping strategy training interventions for individuals with low functional literacy competencies who wish to re-engage with formal education.

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CHAPTER ONE- INTRODUCTION

Adult literacy as an issue of concern for governments internationally was largely unaddressed until the results became available from the International Adult Literacy Survey (IALS) in 1996. This representative survey explored functional prose, document, and quantitative literacy² levels among working-age adults in 22 countries including New Zealand (OECD, 2000). Secondary analysis of these data showed that 48% of working-age New Zealanders (16-65 years of age) were below the level of literacy required to function adequately in today's workplaces when literacy was defined as a composite of the three types (Culligan et al., 2004). The IALS figures showed that for prose literacy (the literacy type of interest in the current study) the proportion of the population with below-adequate levels was similar at 47% (Satherley, Lawes, & Sok, 2008). A further follow-up survey in 2006, the Adult Literacy and Life Skills Survey (ALLS) showed little improvement over this ten-year period with 44% of working-age New Zealanders believed to function at low or inadequate levels of functional prose literacy (Satherley et al., 2008).

To address low functional literacy levels, the New Zealand Government introduced the Adult Literacy Strategy 'More than Words' in 2001 which outlines a series of steps towards upskilling this group to levels of literacy capability needed in today's workplaces (Ministry of Education, 2001). This strategy, combined with its overarching Tertiary Education Strategy (TEC, 2002, 2007), spearheaded the push for more specialist adult literacy training providers to

² Literacy is defined in the IALS as "the ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one's goals, and to develop one's knowledge and potential" (OECD, 2000, p. x). Prose literacy is defined as the "knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures, and instruction manuals" (p. x). Document literacy is defined as the "knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts" (p. x). Quantitative literacy is defined as the "knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials" (p. x).

be established in communities, as well as a push for integrated literacy training and/or modules within adult vocational programmes.

However, convincing people of low functional literacy levels who often have a fear of school or classroom environments due to failures and rejections experienced in the past (Berg & Lick, 2001) to attend adult education where their literacy needs may be assessed and will be addressed is difficult. The IALS research found that there often is a low level of self-awareness of literacy issues perhaps due to a denial effect or a product of avoidance strategies which have taught the individual that they do not have a need for these skills (OECD, 2000) (which in some cases, may be accurate). However, in the case of the former, or those who realise they do need these skills if they wish to progress, a fear of failure in a formal educational environment could lead to difficulties with learning and maintaining participation in such courses.

In general, research evidence suggests a range of coping strategies that people with low literacy levels engage in to avoid or address their literacy issues (see Eberle & Robinson, 1980; Lytle, Marmor, & Penner, 1986; OECD, 2000; Ross, 1987). These coping strategies include seeking instrumental social support, for example, a close family member or friend may have been called on to undertake reading or writing tasks on the individual's behalf (Ross, 1987). Further, avoidance strategies were commonly reported such as avoiding applying for jobs or engaging in work practices that required reading, writing, or numeracy skills (Ross, 1987). A further example of avoidance could be seen in the everyday task of ordering from a menu where individuals with low literacy have reported ordering items they know would be common on a menu, requesting the waiter/waitress to suggest a meal, or ensuring they are the last to order at a table so they can copy another's order (Ross, 1987).

Given the potential for perceived rejection and failure in adult educational environments and the avoidance strategies often used by those of low literacy levels as outlined above, a

higher level of stress than that felt by those of higher literacy levels was proposed for this group when engaging in educational tasks. Further stress could also be proposed due to the conflict of motive of avoidance/engagement in education with this group. While fear and the need for or habit of avoidance is not the only impacting factor on attrition rates of low literacy individuals, it is proposed that these factors are important reasons behind high attrition rates associated with this group (Harman, 1984; Neubauer & Dusewicz, 1988).

Given the above, it was proposed that particular coping styles or strategies for addressing stress in educational environments may differ by literacy level. If adults engage in certain coping strategies that can be linked to persistence and/or literacy level, this may help to focus adult programmes of study to address particular ways of coping with stress which result in lower attrition rates and potentially a reduction in the fear associated with participation (which in turn could lead to future uptake of lifelong learning opportunities and further self-improvement).

It is an assumption of this research that learning is a lifelong process that is to be encouraged for those who require or would like to obtain further skill sets.

1.1 AIMS OF THE STUDY

The focus of this study was on the manner in which stress appraised as a threat or a challenge in adult vocational courses was responded to (or coped with) by those of differing prose literacy score. A second interest was the relationship between prose literacy, coping strategy use, adaptability, and subsequent persistence and post-course goal achievement. A final interest was any changes in coping response type and prose literacy score across time.

The primary outcome of this research is an understanding of the relationship between prose

literacy and coping style use. It is proposed that this information may be of use as a first step in the development of interventions to assist individuals with low literacy levels who may need to learn different coping strategies to address educational stress effectively.

It is important to note that given the diversity of the adult vocational programmes sampled from it is not the intention of this study to evaluate the courses, teaching practices, or curricula themselves. Therefore, while the course itself is seen as a potential covariate and as a potential partial explanation of any differences in prose literacy score or coping strategies from time one to time two, an evaluation of the impact of the specific course is beyond the scope of this study.

On a related note, it must be emphasised that while prose literacy is a variable of interest in the current study, an individual's means of literacy skill attainment or ways of coping with literacy tasks are outside the scope of this study. Only when psychological stress is evidenced through an appraisal of threat or challenge in response to a literacy task would this aspect then fit the current project scope.

Finally, it is also important to emphasise that the focus of this research is on coping responses to appraisals of threat or challenge only. Further, the nature of the stressor itself is not the focus of this research. Instead, it is the coping responses to the appraised stressor that are at the crux of this research.

A series of research questions were developed to explore the above-proposed relationships:

1. Can coping style, adaptability, or prose literacy score predict persistence in the course?
2. Does coping style explain a significant amount of variance of prose literacy score?
3. Does adaptability explain a significant amount of variance (over and above coping style) of prose literacy score?

-
4. Do coping styles, adaptational strategies, or prose literacy scores change over time?
 5. Can coping styles, prose literacy score, and/or adaptational responses predict achievement of post-course goals?

1.2 ORGANISATION OF THE THESIS

This thesis explores these proposed relationships, beginning with a literature review of stress and coping research (chapter two), followed by an outline of theoretical understandings of adult literacy (chapter three). Chapter four outlines the methods used to gather information on the coping styles and strategies, adaptability, and literacy level of 56 participants in an adult vocational course at two time points, as well as evidence of their employment and further educational goals three and six-months post-course. Chapter five outlines the results from this study addressing each of the research questions and associated hypotheses in turn, while chapter six interprets these results in light of past and current coping and adult literacy theory.

CHAPTER TWO – STRESS AND COPING: A REVIEW

The field of coping research is filled with multidimensional, seemingly mixed results. These mixed results may seem to show inconsistency; however, it is possible that with a construct such as coping which is highly person and situation specific, variability is to be expected. Generally studies in this area have sought to determine the relationship of stress and coping response to an adaptive or maladaptive psychological outcome such as psychological wellbeing or level of psychological distress. Different means of measuring not only coping processes (strategies and styles) but also outcome variables have contributed to these seemingly inconsistent results.

Coping responses to threat can be viewed as either a function of disposition or situation, or indeed disposition and situation. Responses to stressors can incorporate problem-solving, emotional, or avoidance factors, which in turn can be considered adaptive or maladaptive. The literature review that follows outlines the main theoretical models of coping that have defined the field to date, beginning with a detailed review of the transactional model of stress and coping that underpins much of the current research. The literature review also provides an overview of the current debates within this research area. Stress and coping is then discussed in light of adult literacy and participation in adult educational environments, leading to a description of the current project and hypotheses.

2.1 THEORETICAL MODELS OF COPING

2.1.1 Transactional model of stress and coping

The transactional theory of stress and coping developed by Richard Lazarus was first

discussed in detail in the book, *Psychological Stress and the Coping Process*, published in 1966. The theory was further modified in the publication, *Stress, Appraisal, and Coping*, by Richard Lazarus and Susan Folkman, published in 1984. This cognitive theory, based on phenomenological assumptions, has become the basis for current thinking on the relationship between stress and coping³.

A simplistic description of Lazarus' (1966) and Lazarus and Folkman's (1984) transactional model of psychological stress and coping follows as an introduction to the key aspects of the model (see Figure 1 below). The current study is focused on the appraisal of threat and challenge only (not harm/loss or benefit); therefore the model described here includes only the first two constructs. At the core of the transactional model is the interaction between person factors (characteristics of the individual including past experiences, personality traits, internal resources, etc.) and situational factors (external resources, social cues and mores, physical context, etc.). Agents of harm (external or internal events that cause stress) are appraised (via a process known as primary appraisal) as threatening or challenging, resulting in an affect of anxiety. Following this, or in concert with this, the agent of harm is located and appraised through secondary appraisal processes which determine whether and what type of action will be taken. Secondary appraisal can result in either reappraisal (a decision that the harmful agent is actually not a threat – this can be a form of defensive coping) or a decision on a coping response. Reappraisal is indicated in Figure 1 by a dotted line which represents a pathway that may or may not occur. The coping action tendency (including affective and behavioural dimensions) chosen is dependent on the situation to be addressed, the context within which that situation is to be addressed, the resources available (both internal and external), and the predispositions of the individual as to preferred ways of coping with stress. Coping responses

³ Chapter two draws heavily on the theory of Lazarus (1966) and Lazarus and Folkman (1984). For ease of reading, where a paragraph is attributable to one of these sources, one citation is made at the beginning. The remainder of the paragraph should be read as drawn from the cited work, unless other attributions are made in the text.

can broadly include actively taking steps to lessen the threat or remove the agent of harm, or disengaging either mentally or behaviourally in an attempt to ignore the harm agent or regulate the emotional aspects of the stress response. Coping responses for challenge can include taking steps to address the challenge. Coping responses can only be judged with regard to the efficacy of their outcomes when knowledge of the particular goals and motives of the individual involved and the situational factors are considered.

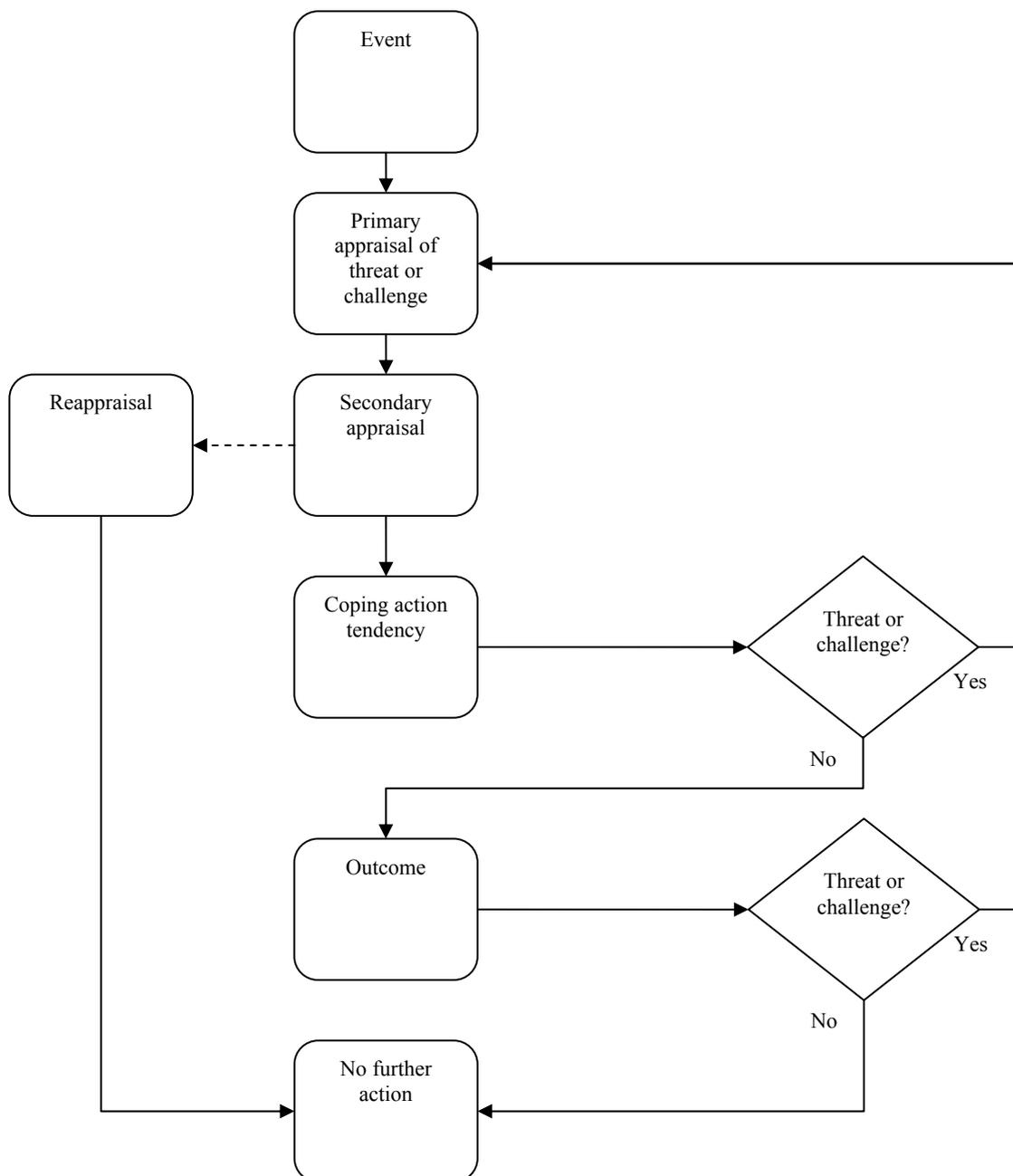


Figure 1. A simplistic diagram of the transactional model of stress and coping (Lazarus, 1966; Lazarus & Folkman, 1984).

The model is not linear and is composed of feedback loops also summarised broadly in Figure 1. Lazarus (1966) emphasises this continuous flow:

When we analyse a single psychological sequence, from stimulus through appraisal to reaction, we are arbitrarily stopping the continuous flow of psychological events in order to study the variables that make up a limited segment of this flow. But we must remember that the flow continues in spite of the restrictive units or sequences we choose to examine for the sake of convenience. If a reaction is appraised as a threat stimulus, a whole new psychological sequence leading to further reaction will ensue, and so on. (p. 75)

Lazarus and Folkman (1984) discuss the positivist argument that “individual differences occur because human environments are always different and therefore individual differences are not necessarily due to person characteristics” (p. 23). The positivist approach assumes objectivity and rationality on behalf of the individual, implying that two people in the exact same situation will react in the exact same way. This has not been found to be the case (see Carver et al., 1989; Epstein, 1992; Fleishman, 1984; Folkman & Lazarus, 1980; Nakamura & Orth, 2005; for discussions of the range of factors (personal and situational) that can impact on coping action tendency selection in any one individual). Lazarus’s (1966) transactional model explains these findings by arguing that human environments are always different because of the differing appraisals brought to bear on them through individual differences.

2.1.1.1 Stress

Stress is an inclusive term covering a range of impairing or facilitating factors that make up an individual’s response to a stimulus (which also falls under the rubric of stress) and which is perceived to be some kind of ‘threat’ to the individual concerned (Lazarus, 1966). Stress has

become an all-inclusive term for negative disturbing emotions and, in the words of Lazarus (1966), “conveys the idea that the person or animal is beset by powerful pressures which greatly tax the adaptive resources of the biological or psychological system” (p. 10). In current research, stress has also been conceptualised as one part of the larger rubric of emotion, thereby positive emotions or affect are included in its make-up (Lazarus, 1999). Stress could be viewed as a response to inadequate adaptation or failure to fully adapt (Lazarus, 1966).

Traditionally, stress has been associated with negative emotions (Lepore & Evans, 1996; Thoits, 1986), but it can also be experienced as an instigator of challenge (Baum, Singer, & Baum, 1981) which implies the presence of positive emotions (Lazarus, 1999; Lazarus & Folkman, 1984). An opposite view is the argument that only negative circumstances can be considered stressors as positive events have been found to have only minor effects on negative psychological wellbeing (Thoits, 1983, 1986). On the other hand, it is argued that positive events can also act as stressors (Lazarus & Folkman, 1984). One example might be inheriting money as this could initially be seen as a positive event; however, stress could be appraised if the individual felt threatened by the responsibility for that money and the associated social role changes it might imply. As with negative events, it is the implications of the event in question that can result in a threat appraisal.

Hobfoll, Freedy, Green, and Solomon (1996) state that if transitions in life are considered stressful and positive and negative stressors are possible, then positive transitions should produce negative stress reactions just as negative transitions do. However, this approach confounds reactions to threat with outcomes of coping behavioural responses. Munton (1990) has shown, while transitions such as moving house can be stressful, the appraisal of the consequences of the event is dependent on whether the losses felt outweigh the gains achieved or vice versa. Lazarus and Folkman (1984) explain positive and negative stressors by stating that primary appraisal of a threat in response to a stressor, if appraised in secondary appraisal in

a positive frame, will be considered in the framework of challenge, whereas a negative framing will result in an outcome of threat. Both these general approaches can result in negative or positive coping outcomes.

Stress has been viewed as an external agent (Lepore & Evans, 1996) acting in interaction with the individual who lies on a continuum of stress proneness with low levels of stress proneness equated with hardiness and extreme high levels equated with psychopathology (Costa, Somerfield, & McCrae, 1996). However, in Lazarus and Folkman's (1984) conception, stress can also evolve from an internal mechanism, for example, negative self-thoughts that threaten self-esteem. While high levels of stress proneness could indicate psychopathology this is not necessarily a cause-effect relationship. Individuals who are vulnerable to stress proneness may show high levels of resiliency or hardiness in moving on from these stressful experiences, provided the chosen coping strategies are effective in removing the stressor or allowing the individual to disengage from the stressor.

In later work, Lazarus (1990, 1999) and Costa et al. (1996) have advocated the movement away from studies of stress and coping to studies investigating coping as attempts at emotional regulation and problem-solving. Lazarus (1990, 1999) notes that emotion is a broader concept within which stress is but one part tied to concepts of personality traits, dispositions, and psychopathology. For the purposes of this study, it is accepted that emotion is a broader overarching concept and the use of the term 'stress' can be used interchangeably for the "stress emotions" felt by an individual at each stage of the appraisal and coping process (Lazarus, 1999, p. 35). Stress is defined in terms of being an umbrella concept for the emotions that are associated with threat and challenge for this study's participants.

There is also an argument that stress should be defined objectively by others rather than subjectively by the individual in question (see Dohrenwend, Dohrenwend, Dodson, & Shrout,

1984; Lazarus, 1990). Dohrenwend et al. (1984) argue that in the instance of an objective (or generalised) view of a positive event, a perception that the said event is stressful for a particular individual implies neurosis rather than stress. However, the subjective approach to stress argues that stress cannot be defined on a normative basis (Lazarus, 1990). For example, a phobia of spiders may be viewed as neurotic in a culture where no poisonous spiders exist, but normative for someone whose life has been spent around poisonous spiders. In Dohrenwend et al.'s (1984) interpretation, the individual in this example (who had often been around poisonous spiders) would be considered neurotic; however, there are valid reasons for the stress reaction based on past experience. Those that argue for an 'objective' conceptualisation of stress claim that subjective approaches confound the understandings of the antecedent and consequent variables (Laux & Weber, 1987). However, in the steps of Lazarus (1966), Lazarus & Folkman (1984), and Lazarus (1999), it is this author's understanding that while subjective stress definitions do confound the antecedents and consequences of the construct, stress cannot be removed from these factors as a stimulus cannot be defined as a stressor or resulting in stress without a subjective appraisal of its antecedents and potential consequences (or risk of harm).

Due to its broad nature 'stress' is difficult to define. Stress can be both a stimulus and a response to that stimulus, a physiological reaction and/or a psychological one, and an impairment of function or a facilitator of behaviour (Lazarus, 1966). (The focus of the current work is on psychological stress so physiological stress indicators will not be reviewed here). The use of 'stress' as a term can also be confounded, as while some writers use the term 'stress' in their research, others refer to 'anxiety', 'conflict', 'aggression', 'anger', 'frustration', or 'defense' for the same phenomenon. Reactions to psychological stress can incorporate all, some, or one of four main symptoms: disturbed or negatively toned affect; motor-behavioural reactions; alterations of adaptive functioning; and, physiological reactions (Lazarus, 1966).

Cooper and Dewe (2004) in their book, *Stress: A Brief History*, outline the difficulties still

inherent in the present day with defining stress claiming that a systematic definition of the term is yet to be found. Dewe and Trenberth (2004) have argued that stress needs to be defined in terms of its meaning to each individual. While a general common understanding of the term may be possible, what is 'stressful' for each individual and the meaning of that experience is defined phenomenologically in the present study. Because of the difficulty in defining stress, in later work, Lazarus (1999) has argued for the movement away from stress to the study of emotion. As specific emotions are believed to be associated with specific appraisals and coping action tendencies, a focus on emotion may impose a level of specificity that cannot be attained by use of the stress term (Lazarus, 1999). Cooper and Dewe (2004) also support this suggestion. However, to the present author's knowledge, no dispositional coping assessment tools focused on and investigating all 15 of Lazarus' (1999) emotions of interest, as opposed to the more general construct of stress, are currently available.

2.1.1.1.1 Negatively toned affect

Introspective reports of affects are subjective inferences; however, it is assumed that there is general agreement about the types of situations that will result in certain affects, and general agreement about the internal properties that will result in a certain affect (Lazarus, 1966). For example, it is assumed that a report of anger in one individual will be similar in properties to anger experienced by others, even if it is not the same in every aspect. Therefore, each experience of affect is considered to have common inter-individual properties as well as distinctive intra-individual qualities.

Interestingly, Lazarus (1966) also states that the four indicators of psychological stress do not have to infer the same affective tone. For example, if an individual reports an affect of anger, physiological indicators may show heightened arousal, but behavioural indicators may show no outward aggression at all. In this instance it could be inferred that the individual felt

angry but for whatever reasons has appraised the situation as inconducive to expressing that anger behaviourally.

Lazarus's transactional theory of stress and coping suggests specific roles for certain affects, including the premise that affect will differ based on the stage of appraisal. (Primary and secondary appraisal processes will be outlined in more detail later; however, for present purposes, primary appraisal relates to an initial appraisal of threat, whereas secondary appraisal refers to the considered cognitive review of the situation to determine the response needed). In the transactional model, when a primary appraisal of threat is made by an individual, anxiety is the affect that results (Lazarus, 1966). Lazarus (1966) defines anxiety as an affect that can only occur when "no direct mechanism of coping is possible, since no clear harmful stimulus has been identified even though threat is appraised" (p. 323). If secondary appraisal does not occur for whatever reason (for example, if the threat is too ambiguous and the individual does not have further cues to appraise the nature of the threat in more detail) the individual will not progress to experiencing other affect (unless, of course, the ambiguity in itself is threatening). Anxiety is not experienced in the incidence of primary appraisal and secondary appraisal occurring simultaneously, as the affect associated with the chosen action tendency and coping response will immediately take effect (primary and secondary appraisals can overlap with one another). If the situation is reappraised as non-threatening, Lazarus (1966) states that anxiety will disappear and will not be replaced with another affect except possibly a positive affect such as relief.

The implication that a coping appraisal process results in only one affect and its associated behavioural indicators is inaccurate. Different affects can occur in combination, for example, it is possible that anger and fear can occur together, particularly, as Lazarus (1966) points out, when an anger coping action tendency acts as an antecedent threat variable that fosters a fear reaction. An alternative hypothesis put forward by Lazarus holds that two affects do not occur

simultaneously but instead could fluctuate quickly, each affect being brought to the fore in turn as different aspects of the situation are attended to and appraised over time. Lazarus's transactional model of stress and coping holds that cognitive appraisals occur before affect in the coping process. Therefore, a case of seemingly conflicting affects could actually be a case of conflicting appraisals of threat. An appraisal of threat would be incompatible with an appraisal of contentment, but Lazarus hypothesises in the event that incompatible affects do occur simultaneously, it is likely that they are responses to different parts of the situation in question.

All the affective reactions associated with threat can be measured in terms of traits or states (Lazarus, 1966). For any affective reaction to threat to be defined as a trait, the affect must be consistently and continually seen in the individual's pattern of reactions to threatening events. Lazarus states that "[c]hronic implies the persistence of threat" (1966, p. 333), implying that a chronic affect such as anxiety under conditions of threat would be an anxiety trait response. However, it does not necessarily follow that a person who holds a disposition to respond in anxious ways to threat is always under threat. Therefore, a distinction must be made between trait anxiety (and other affects) and chronic anxiety (and other affects).

In chronic anxiety, the individual is continuously appraising threat which is resulting in an anxious affect (Lazarus, 1966). This could be a trait response on behalf of an individual who usually responds with anxiety to threat, or it could be a state response in that the antecedent conditions are ambiguous resulting in an affect of anxiety for this particular series of situations (which could last for a long period of time). When discussing chronic anxiety Lazarus offers two potential reasons for its continual nature: (1) the individual is continually exposed to the same threat stimulus or different threat stimuli; and, (2) the individual appraises all or too many situations as threatening because of certain psychological characteristics. Acute anxiety (and other affects) is distinguished from chronic by its shorter temporal nature and acute affects are

likely to be more severe than chronic affects (Lazarus, 1966).

2.1.1.1.2 Motor-behavioural indicators

Lazarus (1966) notes two types of motor-behavioural indicators of threat: expressive acts and instrumental acts. These are only defined briefly here as they are not directly relevant to the focus of the current study. Expressive acts are defined as “the style or manner in which some goal-oriented behaviour is performed. It is distinguished from an instrumental act which is defined by the intention or goal” (Lazarus, 1966, p. 342). Instrumental acts are defined as acts that contribute toward achievement of “goals that the individual seeks to accomplish by the act, for example, injury to someone else, solicitation of approval, creation in someone of an attitude...” (Lazarus, 1966, p. 347).

2.1.1.1.3 Alterations of adaptive functioning

The Yerkes-Dodson law outlines an inverted-U shaped function between drive (or motivation) and performance (Yerkes & Dodson, 1908, cited in Lazarus, 1966). Essentially, the Yerkes-Dodson law states that moderate amounts of drive in the face of threat result in optimum levels of performance; however, as stronger drive is needed to maintain performance levels, performance begins to decrease. If the purpose of drive or motivation is to improve performance (to eventually achieve a goal), it is assumed that as higher levels of motivation are needed to obtain or persist toward that goal the individual might feel that that goal is threatened, therefore coping processes come into play. However, when the level of drive needed becomes too high, or alternatively, the degree of threat is too high, performance (and possibly persistence) begins to decrease. This has implications for level of threat and its effects on persistence in educational environments.

Lazarus (1966) holds, however, that the Yerkes-Dodson law is too simplistic as it fails to consider the interacting roles of different variables and it does not account for the large variability seen among individuals. Lazarus argues that the appraisal processes involved in performance of a task as well as the properties of the task itself need to be considered in any analysis of a drive-task performance relationship.

A number of studies note that performance on a task can vary dependent on a range of factors. Threat appraisals and negative affect can compete with or interfere with task performance as evidenced by research into stereotype threat among differing gender and ethnic groups (Keller & Dauenheimer, 2003; Spencer, Steele, & Quinn, 1999; Steele & Aronson, 1995). One further way in which task performance may be interfered with is through an attentional bias on situational and other cues aligned to the threat. Mathews and MacLeod (1985, 1994) argue that highly anxious participants tend to have difficulty ignoring negative emotional stimuli and tend to bias their attention to or prioritise threat and negative emotional cues creating more anxiety.

If a task requires a sequence of completion of different aspects, high levels of stress or anxiety could result in an attentional bias on one aspect of the task at the expense of the others and therefore impairment of overall performance (Lazarus, 1966). Fenz (1964) discusses the opposite issue of inadequate focus and inability to attend to relevant and irrelevant cues at high levels of stress which could have the effect of impairment of performance. Furthermore, a search for more appropriate forms of behaviour to address a threat could initially result in decrements of performance until new techniques are found and a better approach potentially achieved (Lazarus, Deese, & Osler, 1952).

Lazarus (1966) notes a further influencing factor on performance deficits describing a process whereby if the threat of failure on a task is denied through the claim that the task is

unimportant, the participant is able to give up and not attempt the task while avoiding failing (the idea being that it is impossible to fail at something which is not even attempted). Once the drive for task performance is removed, impairment in performance of the task is expected.

Eysenck and Calvo's (1992) processing efficiency theory also sheds light on the relationship between anxiety, threat, and task performance. This theory holds that self-regulatory processes mediate the effects of anxiety on task performance resulting in two main reaction types when poor performance is threatened: 1) coping directly with the threat for example, using approach or avoidance techniques; or, 2) applying additional effort or resources to performance of the task (Eysenck & Calvo, 1992). These authors argue that high anxious individuals in evaluative situations will be more likely to either avoid the task or will need to apply more effort (referring to cognitive effort in processing functions of working memory) to achieve similar performance levels to their low-anxious counterparts (Eysenck & Calvo, 1992).

A range of other person and situational factors will also impact on task performance. Lazarus (1966) lists capacities (including intellectual), fatigue, distraction, and interference among others. Literacy level, mood, level of comfort, and health are other factors that could be added to this non-exhaustive list.

2.1.1.2 Sources of stress

Psychological stress includes self-reports of arousal or negative affect in reaction to a threatening stimulus (Lazarus, 1966). Psychological (and indeed physiological) stress reactions can result from an external stimulus or situation to which the individual is exposed and appraises as threatening (a stressor). As Lazarus states: "...stress reactions appear to be the result of conditions that disrupt or endanger well-established personal and social values of the people exposed to them...The stimulus conditions are therefore identified as situations of stress"

(1966, p. 4). Describing stress situations and stress reactions is a circular argument according to Lazarus (1966) as "...the stress stimulus is defined by the reaction, and the stress reaction is, in turn, defined by its relationship with the stress stimulus" (p. 5). Lazarus argues that the ability of a situation to act as a stressor, and thereby produce a stress reaction in an individual is attributable to the interaction or "transaction" between an individual and a situation (1966, p. 5). The personality dispositions (themselves a product of genetic dispositions, cultural influences, and unique life experiences) of an individual influence whether any situation is appraised as stressful. For example, one individual may view a situation as stressful, while another may not. In parallel with this, research has found that extreme situations may result in an appraisal of stress for most individuals faced with that situation, indicating a level of generality in appraisals of threat (see Benner, Roskies, & Lazarus, 1980). It is also useful to keep in mind however, that individual differences still impact on this as while a particular situation may be considered a mild stressor for one individual, this same situation could be perceived as a large to moderate stressor by another individual, and differing secondary appraisals (of course constrained by situational variables) will result (Benner et al., 1980).

Lazarus (1966) argues that 'stress' should be kept as a generic term that describes stress-producing stimuli, the stress reactions themselves, and all the intervening processes arguing that, "Its general connotative value can be retained without entailing contradictory definitions and overlapping usage...It defines a large, complex, amorphous, interdisciplinary area of interest and study" (p. 27). Further qualification of the term can be attained by adding adjectives such as sociological, physiological, or psychological. In keeping with his 1966 declaration that 'stress' should be kept as a generic term, 18 years later Lazarus and Folkman (1984) outline only the psychological focus and sphere of meaning within which they believe psychological stress belongs: "Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19).

2.1.1.3 Threat

Lazarus (1966) argues for the term ‘threat’ to be used when discussing the psychological aspects of stress. This term in Lazarus’s conception encompasses the primary reaction of the individual to a stimulus or cue that the individual has appraised as potentially leading to harm. While the concepts of threat and stress overlap to a degree, there are differences. Threat is psychological in nature in that it must be inferred from antecedent stimuli and subsequent responses; it is not readily directly observable. Threat has two main characteristics: (1) it is anticipatory of potential harm and therefore is future-oriented; (2) it is a product of cognitive processes or appraisal which involves perception, learning, memory, judgment, and thought. Lazarus (1966) states that “threat is defined as the anticipation by the individual of a harmful occurrence” (p. 33). Confrontation with harm is defined as the “actual occurrence of the anticipated event” (Lazarus, 1966, p. 38).

2.1.1.3.1 Degree of threat and stress

In terms of stress reactions, people may react in more extreme ways (such as panic) to more extreme circumstances, whereas reactions may be more considered when faced with low-stress conditions. Lazarus (1966) notes that the strength of the stress response is determined by the degree of threat appraised: “Degree of threat is a function primarily of amount, imminence, and likelihood of the anticipated harm” (p. 43). Amount refers to the amount of harm the harmful stimulus is appraised to have (with greater amounts of harm associated with greater degrees of threat), imminence refers to the duration of time between the appraised threat and the confrontation with the harm (with shorter amounts of time associated with greater degrees of threat), and likelihood of the harm refers to the perceived likelihood or probability that the harm will actually eventuate (with higher probabilities that it will eventuate linked to higher degrees of threat) (Lazarus, 1966).

With regard to the imminence of an agent of harm, imminent threat is likely to be considered subjectively worse than the confrontation itself, while threat of a confrontation distant in time is likely to be appraised at a low degree of threat that increases as the confrontation draws closer (Riskind, 1997). Increase of the threat is theorised to be in proportion to the strength of the motive or goal that is to be thwarted (Lazarus, 1966). Sometimes confrontation with harm is so immediate that the anticipatory condition of threat does not occur. Interestingly, threat can also occur following a confrontation as further threats arising from the harm are appraised or as the meaning of the harm sets in (see Lazarus, 1966 for a discussion).

Lazarus and Folkman (1984) state that the more imminent the harmful event, the more urgent and intense the appraisal process will be. However, when an event is not imminent, the appraisal process will be more complex. There is also the possibility that the long duration between initial appraisal of threat and imminence of harm could result in a delay of secondary appraisal processes until the approaching imminence of the harm confrontation demands attention through stimulus cues and the increasing strength of the threat. If, however, an individual uses the time available to manage threat through cognitive coping, the threat may be reduced and the harm confrontation avoided.

2.1.1.4 Appraisal

Cognitive appraisal is defined as the mechanisms that give a stressful stimulus meaning for the individual (Holroyd & Lazarus, 1982). This meaning is not necessarily a rational construction (Edwards, 1988). Lazarus and Folkman (1984) advocate three kinds of cognitive appraisal: primary appraisal, secondary appraisal, and reappraisal. It is the convergence of both primary and secondary appraisal that shapes the meaning of an encounter (Lazarus & Folkman, 1984).

Primary appraisal is the initial judgment of a stimulus which results in a categorisation of the stimulus as either irrelevant, benign-positive, or stressful (Lazarus & Folkman, 1984). This latter category has three forms itself: harm/loss, threat, or challenge. The harm/loss subcategory refers to damage that has already been sustained to the individual; threat as outlined above refers to *anticipated* harm or loss; and, challenge refers to future events that have the potential for mastery or gain. Lazarus and Folkman (1984) claim that “[c]hallenge appraisals are more likely to occur when the person has a sense of control over the troubled person – environment relationship. Challenge will not occur, however, if what must be done does not call for substantial efforts” (p. 36). The focus of the current study is on appraisals of stress that invoke threat or challenge.

Secondary appraisal follows (or occurs simultaneously with) a primary appraisal and involves an assessment of the coping response that will be used to address the appraised threat or challenge (which will include affect and behavioural responses which may involve attack, avoidance, or other such processes) (Lazarus, 1966). Each pattern of reaction which involves affective patterns, behavioural patterns, and physiological patterns is determined through a particular secondary appraisal process. Secondary appraisals give rise to the quality and strength of the emotional reaction (Lazarus & Folkman, 1984). This appraisal process is dependent on and contributes to the primary appraisal of threat or challenge, and both can be undertaken at any level of awareness (Lazarus, 1966; Lazarus & Folkman, 1984).

Laux and Weber (1987) note that the secondary appraisal process (and indeed the primary appraisal process) is not necessarily rational. These authors argue that while Lazarus and Folkman (1984) acknowledge that coping response choice is not always rational, there is a lack of awareness of irrational responding beyond the defensive reappraisal construct. Laux and Weber (1987) argue for an inclusion of the understanding that coping responses can be irrational and chaotic without being defensive.

Lazarus (1966) has noted three factors of the stimulus configuration that act as determinants of secondary appraisal and the chosen coping reaction. These are: (1) the location of an agent of harm, (2) the viability of alternative available actions to prevent the harm, and (3) situational constraints concerning such actions (p. 174).

To appraise a threat with no ambiguity and therefore to determine the most effective coping strategy, the individual needs to clearly identify the agent of harm signalled by the threat cues (Lazarus, 1966). Lazarus claims that an agent of harm must be identified for direct forms of coping such as avoidance or attack to occur, as these behaviours and their associated affects must be directed at something. An appraisal of threat on an ambiguous agent of harm (which cannot be identified even partially) will result in an affect of anxiety, with no subsequent secondary appraisal process. When the harm is located within the individual, defense coping processes are likely to take place, although attack on oneself is also possible. When located external to the individual, secondary appraisal is likely to result in direct coping processes such as attack (and associated anger) or avoidance (and associated fear).

The second determinant of secondary appraisal is the viability of alternative available actions to prevent the harm. Lazarus (1966) claims that all being equal, the individual “chooses strategies from its available repertoire on the basis of the apparent viability of the action” (p. 179). Viability of the action is defined as an action of which the individual must be capable, one that could be successful (at least in part) in mastery of the threat, and an action that is evaluated as likely to result in favourable consequences. Judgement of viability includes both dispositional and situational factors.

As secondary appraisal processes require the consideration of appropriate coping strategies (which are dependent on viability judgements), Bandura’s (1977) work on outcome and efficacy expectancies is relevant here. Outcome expectancy is defined as “a person’s estimate that a

given behaviour will lead to certain outcomes” and efficacy expectancy is defined as “the conviction that one can successfully execute the behaviour required to produce the outcomes” (Bandura, 1977, p. 193).

Lazarus and Folkman (1984) state that in the event of an affect of fear in relation to the secondary appraisal of a threat,

[a]s efficacy expectancies increase and the person judges his or her resources more adequate for satisfying task demands, the relationship is appraised as holding the potential for more control and therefore as less threatening. As a consequence, fear level decreases and coping behaviours are instituted. In other words, the coping behaviours are not instituted because of increased efficacy expectancies, but because of the effect of the efficacy expectancies on the person’s appraised relationship with the environment. (pp. 74-75)

Situational constraints are the third aspect of determinants of secondary appraisal processes. These along with personal constraints are discussed in more detail under ‘Stimulus Configuration’.

Finally, reappraisal is the changing of an earlier cognitive appraisal due to new information from the environment or person factors (Lazarus & Folkman, 1984). Reappraisals change the meaning of a situation without changing anything in the stimulus itself. Reappraisals can also take a defensive form, called specifically defensive reappraisals, which defend the individual from the anticipated harm/loss by reappraising the threat as non-threatening.

Defenses are defined as “psychological manoeuvres in which the individual deceives himself [or herself] about the actual conditions of threat” (Lazarus, 1966, p. 266). Defense strategies include denial, isolation, rationalisation, or intellectualism, the function of which is to reappraise the threat as benign. Successful defensive reappraisal is similar to inaction in that

there will be no action tendency and no negative affect associated with the reappraisal. The difference between the inaction coping tendency and the defensive coping tendency is that the former is based on an appraisal of no threat, while the latter is based on a reappraisal of no threat due to defensive manoeuvres. Lazarus mentions the one exception to defensive processes resulting in no affect or coping tendency as defensive projection. Here, reappraisal processes result in the fear or anger experienced from the original threat being projected onto another person who in turn becomes a threat to the original individual. Reappraisal resulting in defense occurs following an appraisal of threat as strong (the more intense the threat, the more likely defense processes will be used). No form of direct coping is considered viable especially in the case of ambiguous agents of harm where the stimulus in question may give support to defensive processes. Social norms that favour defensive reappraisal will also increase the likelihood of coping in such a way.

Primary and secondary appraisals and reappraisals depend on two antecedents (Lazarus, 1966). The first antecedent is the stimulus configuration, made up of the following factors: the power of the harm-producing condition; the individual's counterharm resources; the imminence of the harmful confrontation; and, the degree of ambiguity of the stimulus cues. Given the focus of the secondary appraisal process on how to cope with the threat this appraisal process also considers the following: the locatability and character of the harm agent; alternative routes or actions to prevent the harm; and situational constraints (including access to resources) which may limit or encourage the proposed coping response. The second antecedent for all appraisal processes is the psychological structure of the individual, made up of a range of factors, the two main groupings being commitments and beliefs (Lazarus, 1966; Lazarus & Folkman, 1984). The appraisal of threat is a subjective judgment, based from an individual's psychological structure and its interaction with the stimulus ("neither stimulus nor personality alone accounts for the reaction") (Lazarus & Folkman, 1984, p. 44). Different people who, because of their unique experiences, have different psychological make-ups, will appraise situations differently –

an encounter that is threatening to one person could be appraised as benign, challenging, or even positive by another (Lazarus & Folkman, 1984). All threat appraisals are also influenced by the degree of threat (Lazarus, 1966).

Lazarus (1966) points out that the process of appraisal must deal with situations in the abstract given that the stimulus configuration under appraisal is always original. A situation can be placed within a general categorisation of situation type, but the interaction between person and stimulus, along with life stage, will always result in original aspects for appraisal. Lazarus (1966) goes on to state that appraisal depends “on complex meanings learned from past experience and fitted to a particular stimulus configuration in the present” (p. 54).

An appraisal that an encounter is irrelevant means that the individual has no interest, values, commitments, beliefs, or goals that are affected by the encounter (Lazarus & Folkman, 1984). Lazarus and Folkman claim this aspect of appraisal allows the appraisal process to be highly adaptive as the psychological system is able to distinguish between those stimuli irrelevant to continued functioning, and those stimuli that threaten continuing functioning and therefore require mobilisation of psychological and environmental resources.

Benign-positive appraisals result when the outcome of an encounter is appraised as positive (thought to preserve or enhance well-being) and is characterised by positive emotions such as joy, love, and happiness (Lazarus & Folkman, 1984). However, benign-positive appraisals may be mixed with some degree of apprehension due to the perception that such encounters sometimes incur some type of cost (Lazarus & Folkman, 1984).

Stress appraisals include harm/loss, threat, and challenge (Lazarus & Folkman, 1984). Harm/loss and threat have already been defined in detail above, but challenge (which focuses on the potential for mastery and gain) is characterised by emotions such as eagerness, excitement,

and exhilaration. Challenge is considered a stress response as it incorporates psychological and physiological stress but in a positive frame rather than a negative frame (as evidenced by the affects associated with this type of appraisal). Threat is distinguished from challenge through affect type (in the case of threat, the main affects are anger and fear) and through the appraisal result – in threat future harm is appraised, with challenge potential mastery or gain is appraised. Both threat and challenge can occur simultaneously and the relationship between threat and challenge appraisals can shift over time; however, it is important to note that these are separate constructs (Carver & Scheier, 1994; Lazarus & Folkman, 1984). In support, Wearing and Hart (1996) argue that the positive or negative affect that results from cognitive appraisals of uplift or hassle respectively, have been found to be largely independent outcomes in non-work settings.

The place of coping in instances of challenge is questioned by Carver and Scheier (1994) who claim that the coping construct is more responsive to threat conditions than challenge conditions due to the nature of positive affect aligned with challenge and the subsequent lack of need to manage or reduce this emotional response. These authors argue that in situations such as educational forums where the potential for loss (threat) is apparent, but is mixed with the potential for gain (challenge), the mechanisms that influence coping responses and their relationships to outcome variables may differ dependent on the focus of the individual. That is, whether the individual is focused on a reduction of the threat or mastery of the challenge (Carver & Scheier, 1994).

The belief of controllability over external or internal stimuli influences whether primary appraisal results in an appraisal of threat or challenge (Park & Folkman, 1997). Those individuals who believe themselves capable of overcoming obstacles will be more likely to view a stimulus as a challenge rather than a threat (Brown, 1993). This finding links with the work of Thomaes (1987) who argues that people with more experience in coping with particular types of situations may be predisposed to coping responses that have been reinforced in the past. If an

individual is familiar with the stressor it should follow that they are also familiar with coping responses that have worked in the past to reduce stress. Therefore, appraisals of challenge may be more likely than appraisals of threat as an individual's perception of the controllability of the stressor is enhanced.

Lazarus (1966) claims that the correctness of the appraisal is only important if the adequacy of adaptation or defensive processes are being assessed. However, it is difficult to determine if a subjective appraisal is 'correct' without understanding the processes behind the appraisal judgment of the individual. Further, an assessment of 'correctness' infers that there is an objective measurement of appraisal of the same encounter. If we take a phenomenological approach to appraisals of threat, there can only be subjective appraisals of correctness. While there can be general agreement that some general approaches to certain types of stressors are appropriate or inappropriate, there is also always great variance in specific individual approaches. Individual differences in stress reactions can also seem inappropriate to an outside observer who is not aware of the external and internal factors that have interacted to result in a certain appraisal and subsequent response.

2.1.1.4.1 Awareness

While coping is considered to be a conscious process (Zeidner & Saklofske, 1996), the appraisal of threat is theorised to operate along a continuum of awareness (Lazarus, 1966). The idea that appraisal of threat and the psychological manifestation of stress can be unconscious has been criticised as being instead a reflection of individuals who are unable or unwilling to report their true psychological status, or the methods that have been used to elicit this information have been lacking in effectiveness (Lazarus, 1966). Awareness assessments rely on verbal reports of threat appraisals and subsequent coping processes which will be confounded by issues of memory and the aspects of the threat or coping process that were attended to

(Lazarus, 1966). The failure to report on some aspects of the threat does not necessarily imply that those processes were outside of conscious awareness (Lazarus, 1966). Furthermore, reporting of a stimulus does not necessarily imply awareness of it as threatening, as Lazarus (1966) states that perceiving a stimulus does not necessarily mean that meaning is derived from it or processed about it.

2.1.1.5 Coping

Lazarus and Folkman (1984) define coping as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p. 178). They go on to state that the focus of this definition is

process-oriented rather than trait-oriented in that it is concerned with what the person actually thinks or does in a specific context, and with changes in these thoughts and actions across encounters or as an encounter unfolds. The definition also distinguishes between coping efforts and automatised adaptive behaviours, and it avoids the problem of confounding coping with outcomes by defining coping as all efforts to manage regardless of outcome. (p. 178)

Threat is based on a cognitive appraisal that some type of goal of the individual is threatened (Lazarus, 1966). Care must be taken to distinguish between “normally motivated behaviour” which would come under the rubric of adaptation and “behaviour motivated by threat” (coping) (Lazarus, 1966, p. 348).

In a more inclusive and recent definition, Dewe, Cox, and Ferguson (1993) define coping as “cognitions and behaviours adopted by the individual following the recognition of a stressful

encounter, that are in some way designed to deal with that encounter or its consequences” (p. 7). This definition removes the need for a harm agent that taxes the resources of the individual which implies harm or loss that has already occurred. Coyne and Gottlieb (1996) criticise definitions such as this arguing they exclude the idea of anticipatory coping. The present study focuses on past stressful encounters, therefore, the definition presented by Dewe et al. (1993) is relevant.

Lazarus and Folkman (1984) define coping traits as “properties of persons that dispose them to react in certain ways” (p. 139). Coping styles are defined as “broad ways of relating to particular types of people or situations”, differing from traits primarily in degree (Lazarus & Folkman, 1984, p. 139). Coping behaviours are defined as the actions (or inaction) that a person engages in when responding to a stressful stimulus (Dewe et al., 1993). Dewe et al. (1993) argue that coping styles are context free while coping behaviours (or responses and strategies) are context dependent. A contrasting view is that coping styles with regard to broad types of stressor may indeed be context dependent but to a lower degree than the coping strategies used within an encounter. For example, dispositional styles of coping could be seen to be more consistent within certain types of situational domains (see Gottlieb & Gignac, 1996; Pearlin & Schooler, 1978; Sperling, 2003; Wearing & Hart, 1996) but not correlated to a large degree with cross-situational measures of coping response.

In Lazarus’ (1966) transactional theory, secondary appraisal processes result in both an affective response and a coping action response. Coping action tendencies is an inclusive term which refers to both the affective response and the action taken to cope with the threat (Lazarus, 1966). A coping strategy is the general approach that an individual will take towards a threat (Lazarus, 1966). The coping function refers to the purpose of the strategy, for example, the coping function of a strategy informed by a qualitative emotional reaction of fear might be avoidance (Lazarus & Folkman, 1984). Coping function and coping outcome are independent

variables. While it can be assumed that a coping strategy with a function of avoidance will result in avoidance, it is not a cause-effect relationship (Lazarus & Folkman, 1984). A coping outcome refers to the effect the chosen coping strategy has (Lazarus & Folkman, 1984). Lazarus (1993) states that the efficacy of the coping outcome can only be determined in relation to the effect it has on the person, the situation it was designed to address, the time frame of the coping process, and the outcome strived for. Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986) claim that it is the individual's judgment of the extent to which the stressful stimulus has been resolved satisfactorily that is key to the determination of coping effectiveness. This judgement is based on the individual's own motives, values, goals, and expectations (Folkman et al., 1986).

Coping is considered to be conscious (Zeidner & Saklofske, 1996), and can be conceptualised in terms of a response to an immediate stressor (a coping response) or as a generalised consistent way of approaching stressful incidents over time (a coping style) (Kohn, 1996). However, Kohn (1996) goes further than Lazarus and Folkman (1984) in claiming that coping can be defined as adapting consciously to a stressor. It is the author's opinion that including judgments of adaptability in definitions of coping implies a confounding of coping response with outcome and with non-stressful encounters. The term 'adaptive' in reference to coping in Lazarus's (1993) conception refers to the "effectiveness of coping in improving the adaptational outcome" (p. 237). However, it is important to note that Lazarus and Folkman (1984) do not claim certain coping outcomes as better than others, as while some defensive coping processes may seem inefficient, they can in some situations be highly effective in reducing the stress. In concert, problem-focused coping strategies may be ineffective in some situations, for example, where a period of inaction is required before problem-solving strategies can be used (Lazarus & Folkman, 1984; Suls & Fletcher, 1985).

2.1.1.5.1 Moderation and Mediation

Coping responses and resources can also act as moderators and/or mediators in the stress – outcome relationship. Lepore and Evans (1996) claim that an individual’s coping responses to stress and the coping resources available to them to deal with a stressor, will influence the impact of the stressor (moderation). Lepore and Evans (1996) also claim that coping responses and resources can mediate the stress – outcome relationship, influencing the outcome through the responses chosen and resources used. O’Driscoll and Cooper (1996) claim, however, that the operationalisation of coping as a mediator or moderator in the stressor-strain relationship is still debatable and no resolution has yet been found with regard to this distinction.

2.1.1.5.2 Problem-focused and emotion-focused coping

Lazarus and Folkman (1984) discuss two main coping functions: problem-focused coping and emotion-focused coping. Problem-focused coping refers to “coping that is directed at managing or altering the problem causing the distress”, while emotion-focused coping refers to “coping that is directed at regulating emotional response to the problem” (Lazarus & Folkman, 1984, p. 150). Folkman and Lazarus (1980) note that emotion-focused coping is more likely to be seen in appraisals where nothing can be done to modify harmful, threatening, or challenging situations, while problem-focused coping is more likely to be seen in situations appraised as amenable to change.

Emotion-focused coping consists of strategies directed at regulating emotion through either lessening emotional distress (which could include avoidance, minimisation, distancing, selective attention etc.) or enhancing emotional distress (for example, athletes ‘psyching themselves up’ before a game) (Lazarus & Folkman, 1984). Emotion-focused coping can include reappraisals of meaning, but not all strategies involve this process (Lazarus & Folkman, 1984). There is a

focus here on distress which has been challenged by recent conceptualisations that argue for inclusion of emotion-approach coping strategies in assessment tools (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). The Coping Orientations to Problem Experiences (COPE) inventory (Carver et al., 1989) is proposed by Stanton et al (1994) to include aspects of emotion-approach within it.

Problem-focused coping strategies focus on both external and internal stimuli (Lazarus & Folkman, 1984). Problem-focused coping strategies can include defining the problem; generating alternative solutions; weighing the alternatives in terms of their costs and benefits; choosing among them; and, acting to address the threat (Lazarus & Folkman, 1984, p. 152). Notably, Zeidner (1998) argues that the function of a particular coping strategy must be taken into account when deciding whether the approach used is an example of problem- or emotion-focused coping. One example includes traditionally conceptualised emotion-focused strategies such as ‘positive reinterpretation and growth’ and ‘acceptance’ which have been found to either facilitate problem-focused coping or be moderately correlated with direct approach of the stressor (Folkman et al., 1986; Zuckerman & Gagne, 2005). Categorisation of a coping strategy under a coping style appears to depend on the function of that strategy with regard to a stressor or class of stressors.

Lazarus and Folkman (1984) state that “[t]he more situation-specific the research domain is...the greater the proliferation of problem-focused strategies” (p. 154). This implies that specific tasks of a specific domain will result in specific problems.

The discussion of problem-focused coping and emotion-focused coping separately does not necessarily imply that these two coping approaches are completely distinct. Emotion-focused coping and problem-focused coping often occur within the same individual to address the same threat (Lazarus & Folkman, 1984). It is important also to note that a distinction between

emotion-focused and problem-focused coping is an initial distinction only (Fleishman, 1984). Both Trenberth, Dewe, and Walkey (1996) and Latack and Havlovic (1992) suggest that a deeper understanding of these styles can be obtained through also investigating the mode or methods of coping that is undertaken through each of these styles (for example, the specific coping strategies).

Wearing and Hart (1996) found support for both dispositional and situational arguments for coping response use. These authors found that regardless of situational domain (work or non-work), participants who chose one coping style in one domain would incline toward that style in the other domain. This supported the dispositional argument, however, use of a coping style or set of coping strategies in one domain did not perfectly predict their use in another domain, suggesting situational influences on choice of coping response also (Wearing & Hart, 1996).

Wearing and Hart (1996) also found small to moderate correlations between the two coping styles within each situational domain indicating that the coping styles were not fully independent of each other in terms of use; that is, if problem-focused strategies were used more, emotion-focused coping strategies were also used more.

2.1.1.6 Adaptability

It is theorised that while coping is an adaptive process, all adaptation activities are not necessarily coping processes (Lazarus & Folkman, 1984); thus, a conceptual distinction between coping and adaptability is made. Lazarus and Folkman note that coping is an effortful activity and must be distinguished from automatic adaptive behaviour. In a novel situation where past experiences cannot be drawn on (or can be drawn on only partly) to determine how to address a threat, effort can be required to adapt to the situation. This is called coping. However, once coping behaviours or strategies for a situation become ingrained (and the

situation ceases to be appraised as stressful), the strategy becomes automatic and does not require effort, thus becoming automatised adaptation (or a cognitive strategy or style) rather than a coping strategy or process per se. Dewe and Trenberth (2004) note that the boundaries between intentional coping effort and automatised adaptive behaviour are not always clear.

Costa et al. (1996) outline the difficulties inherent in attempting to objectively distinguish between stressful events resulting in appraisals of threat and normal experiences which must be adapted to. McCrae (1984) showed that when participants described stressful events in their lives they often chose an ordinary everyday event rather than a major life stressor such as bereavement or natural disaster. One of the hallmarks of the transactional stress and coping model involves emotional arousal, with different affects generally associated with different coping action tendencies (Lazarus, 1966). However, Costa et al. (1996) claim that this implies that emotional reactions are absent in normal non-stressful situations. Further, the coping responses chosen to address stress are argued to be difficult to categorise in terms of coping functions or normal everyday behaviour, for example, discussing an incident with a friend could be either just chatting or seeking of emotional or instrumental social support. Coping and adaptability (and by extension stressful and everyday occurrences, respectively) may be distinguished by the subjective judgment of threat and subsequent stress by the participant involved. While everyday behaviours can approximate coping behaviours, the presence of perceived threat implies that these behaviours are coping behaviours rather than processes of everyday adaptation.

2.1.1.7 Stimulus configuration

There are a range of aspects of the stimulus configuration that impact on the coping action tendency chosen, including: learning from past experiences, arrangement of stimulus configuration elements, balance of power, resources, social and cultural norms and values,

personal constraints, degree of appraised threat, developmental stage, vulnerability, commitments, and beliefs (Lazarus, 1966; Lazarus & Folkman, 1984). With respect to the present study's focus on aspects of coping with threat and challenge in adult learning environments, the most important contributing factors are outlined in more detail here (for a full review see Lazarus, 1966, and Lazarus & Folkman, 1984).

The stimulus configuration is considered to be an antecedent of threat. The stimulus in the environment or within the person that results in an appraisal of threat is the product of a construction process from the interaction of a stimulus and a psychological structure that projects meaning on to that stimulus. Both these factors make up the stimulus configuration. It is important to note that individual characteristics and situation characteristics have dual capacities – they can function to “contribute to and diminish threat” (Lazarus & Folkman, 1984, p. 114).

2.1.1.7.1 Learning from past experiences

As individuals move throughout the life cycle, they learn through experience which stimulus configurations produce harm and the indicators or cues that signal the presence of a harmful stimulus configuration (Lazarus, 1966). In the case of a novel situation, there can be no appraisal of threat as past experience has never appraised it as such (Lazarus & Folkman, 1984). Completely novel situations are rare, however, and it is likely that at least some aspects of the situation will be familiar to the individual (Lazarus & Folkman, 1984). In the case that aspects of the novel stimulus have been previously appraised as threatening, an appraisal of threat will result (Lazarus & Folkman, 1984).

Lazarus (1966) claims that previous learning experiences involving conditions of harm and cues of threat result in later appraisals of threat and subsequent coping processes in similar

stimulus configurations. A person's prior experiences, however, cannot be used independently to predict the types of inferences an individual will make (Lazarus & Folkman, 1984). The meaning and significance of those experiences (Lazarus & Folkman, 1984), along with other cognitive appraisals of other information, interact to develop an inference at any one point in time. With reference to individuals of low literacy levels engaging with adult formal education, it is important to keep in mind the generally negative meanings and significance that has, in prior research, been ascribed to previous experiences of formal learning environments by these individuals (Harman, 1984; Neubauer & Dusewicz, 1988; Tilley et al., 2007).

2.1.1.7.2 Balance of power

The balance of power between the harm-producing stimulus and the individual's counterharm resources (both internal and external) plays a role in the appraisal of threat (Lazarus, 1966). When a stimulus appraised as threatening exceeds the strength of the motive being tested and/or exceeds the resources available to the individual to address the threat, degree of threat will be great. However, when the balance lies in favour of the individual in terms of their resources to address the threat, degree of threat is low.

In keeping with the phenomenological assumptions of his theory, Lazarus (1966) adds that it is the subjective perception the individual has themselves on their level of control and power which also helps to determine if threat is appraised. The balance of power was considered an important concept to review for the present study given that individuals with low literacy levels may believe they hold little power in educational environments due to their prior experiences of such situations. Alternatively, their attempts at regaining power or self-esteem evidenced in prior schooling environments through disruption and avoidance (Eberle & Robinson, 1980; Tilley et al., 2007), may evidence themselves in similar situations in adulthood.

2.1.1.7.3 Resources

Coping resources are defined as properties of individuals, their social environments, and physical environments that allow them to respond to stress stimuli (Lepore & Evans, 1996). Use of resources external and internal to the individual is of interest to the current study as they shape a coping action tendency as well as the initial appraisal upon which threat or challenge is based (Lazarus & Folkman, 1984).

External (or environmental) resources can include social support (from individuals, groups, or agencies) and economic, political, or physical conditions that strengthen the individual against harm (Lazarus, 1966). As Lazarus states:

As a rule, any loss of support from these external resources in the face of threat increases the threat by weakening the capacity of the individual to master the danger. Conversely, any evidence that such supports exist and will function to weaken the harmful impact of the anticipated stimulus condition will serve to reduce the degree of threat (1966, p. 101).

At times of high acculturative stress, Mexican American college students reported that external social support from family and friends resulted in lower levels of anxiety and depression when compared to those who did not have access to such resources (Crockett, Iturbide, Stone, McGinley, Raffaelli, & Carlo, 2007). Ingledeew, Hardy, and Cooper (1997) have also shown that perceived social support can mediate the relationship between stress and avoidance coping with individuals with higher social support levels open to them undertaking less avoidance coping. Seeking emotional social support was also increased by perceived interpersonal social support options (Ingledeew et al., 1997).

Internal resources can include self-esteem, health and energy, positive beliefs, problem-solving skills, and social skills (Lazarus & Folkman, 1984). Resources can also be defined in terms of the ability or competency of the individual to find resources to cope with threat if so needed.

The fact that external (or internal) counterharm resources are present does not imply that these resources will have a threat-reducing effect (Lazarus, 1966). Thoits (1986) outlines social support factors that can serve to heighten the stressor (for example, a person with a high need for control might be more threatened by a stressor when efforts of social support networks seek to take over and remove control from the individual in question).

2.1.1.7.4 Personal constraints

Personal constraints can include tolerance of ambiguity, fear of failure, problems with authority figures, needs for dependency, preferred styles of doing things, and fear of success (Lazarus & Folkman, 1984). Personal constraints can act as facilitators of coping or barriers to coping effectively. They can impact on the type of coping response that is chosen and, in some instances, restrain the person from using particular coping strategies that conflict with these constraints. With regard to individuals of low literacy levels, a range of personal constraints have been documented, including: fear of failure and rejection (Berg & Lick, 2001); fear of success (in the case of others' perceptions of them as now being better than themselves) (Tilley et al., 2007); preferred learning styles that differ from the dominant approach (Tilley et al., 2007); and, problems with formal learning environments that may manifest as problems with authority (Eberle & Robinson, 1980; Tilley et al., 2007).

2.1.1.7.5 Degree of appraised threat

The degree of appraised threat can also impact on the decision of which coping strategies to use. Lazarus and Folkman (1984) state “[t]he greater the threat, the more primitive, desperate, or regressive emotion-focused forms of coping tend to be and the more limited the range of problem-focused forms of coping” (p. 168). This effect is deemed to be a result of a reduction in cognitive functioning under high degrees of threat or stress which is believed to limit access to problem-solving resources. As coping behaviour is multi-determined however, level of threat is only one of many factors that interact to impact on the selection of coping strategies. In some situations there may be few options for using problem-focused coping, and emotion-focused coping strategies may predominate. This does not mean, however, that the use of emotion-focused coping strategies indicates a high level of threat or a primitive reaction.

2.1.1.7.6 Commitments

Commitments are defined as:

an expression of what is important to people, and they underlie the choices people make. They also contain a vital motivational quality. Commitments affect appraisal by guiding people into or away from situations that threaten, harm, or benefit them and by shaping cue-sensitivity” (Lazarus & Folkman, 1984, p. 80).

The stronger an individual’s commitment, for example, to specific goals (such as achievement or affiliation) or values, the greater the threat will be if an appraisal of threat is made to those commitments (Lazarus & Folkman, 1984). Commitments make an individual vulnerable to threats or challenges to those commitments. However, it also follows that when a strong commitment is held, extra effort can result in persistence toward ameliorative action in

the case of threat. In the case of the participants in the current study, if strong commitments are held to achieve then this should enhance persistence irrespective of literacy level.

2.1.1.7.7 Beliefs

Individual beliefs about personal control (both general and situational beliefs) and existential beliefs impact on appraisals of threat and coping processes (Lazarus & Folkman, 1984). General beliefs about control are dispositional and are defined as “the extent to which the person believes outcomes of importance can be controlled” (Lazarus & Folkman, 1984, p. 80). General beliefs are suggested to be more likely used in appraisals of highly ambiguous situations. This implies that an individual with a high general belief in control may find ambiguous situations more threatening than those with lower beliefs in their ability to control the outcome of a threatening situation.

Situational beliefs are defined as the “expectations for controlling one’s own response to the transaction” and are more likely to be used in situations of low ambiguity (Lazarus & Folkman, 1984, p. 80). Situational control appraisals refer to the “extent of which a person believes that he or she can shape or influence a particular stressful person-environment relationship” (Lazarus & Folkman, 1984, p. 69). This appraisal is the product of several factors: the individual’s evaluation of the situation; his or her coping resources; his or her options for a coping response; and, his or her ability to implement the needed coping strategies. It also appears possible that during the processes of appraisal, general beliefs could impact on situational beliefs and vice versa.

Existential beliefs are defined as “general beliefs that enable people to create meaning out of life, even out of damaging experiences, and to maintain hope” (Lazarus & Folkman, 1984, p. 77). Existential beliefs can be beliefs in religion, fate, etc.

Beliefs often operate on an unconscious level in the process of appraisal and they are affectively neutral (Lazarus & Folkman, 1984). Appraising an outcome as controllable can be stress-reducing except in the instance when having control conflicts with a preferred style or conflicts with other commitments or goals. Beliefs can give rise to affect when they interact with a strong commitment in a particular encounter or when a belief leads to a specific affect as part of secondary appraisal processes. During appraisal, beliefs determine what ‘fact’ in the environment is and shape its meaning.

Beliefs in oneself and one’s competencies are also implied in this discussion. These beliefs are shaped by cultural and social system experiences and beliefs that shape meaning of not only the stressor but the choice of appropriate coping responses (Strack & Feifel, 1996).

2.1.1.8 Dispositional and situational understandings

Dispositional and situational approaches are outlined in more depth below under ‘Dispositional and situational influences’. The debate as it specifically relates to the transactional model is outlined here. In summary, trait measures of coping (or dispositional styles) have been called into question as to their predictive ability considering their low correlations with situational actual coping behaviours (see Folkman et al., 1986; Lazarus & Folkman, 1987). Others argue that the construction of dispositions as ‘situation-blind’ is inaccurate and originates from a confusion of stable dispositions with static dispositions (Ben-Porath & Tellegen, 1990; Costa & McCrae, 1990; Krohne, 1993). Krohne (1993) outlined two points in support of this argument. The first states that process and structure are not separate entities but different levels of the same concept. Process under this definition involves a “stream of observed events” whereas structure is the “regularity which one might recognise in such a process” and “the constellation of inferred mechanisms which effect this process” (p. 20). The second point holds that dispositions have long been considered stable traits; however, stability

does not imply a static entity. Static can be defined as no change, whereas changes can be stable or unstable (Krohne, 1993). Following this reasoning, dispositions should be allowed to change but they should change in stable predictable ways if the “crucial effect mechanisms” are known (Krohne, 1993, p. 20). The ability of coping processes to be replicated exactly, however, is restricted by the fact that no one coping situation is ever the exact copy of a previous situation (Krohne, 1993).

Krohne (1993) postulates a series of concepts that assist to illustrate a structure of coping. A coping strategy such as ‘mental disengagement’ is made up of a series of differing coping acts (each of which derives from some part of the individual’s reaction to the stressor) which Krohne argues can be directed at different “partial goals” (p. 21). These strategies can be categorised into “*superstrategies*” or “behavioural classes of a higher order” such as vigilance and cognitive-avoidance (Krohne, 1993, p. 21), or in Lazarus and Folkman’s (1984) approach, problem-focused and emotion-focused coping. Coping reactions and acts are theorised to belong to a behavioural level of analysis, while the coping strategies and superstrategies are at a conceptual level (Krohne, 1993). These differing levels of analysis may help to explain the often low correlations seen between situational or behavioural coping reactions and acts, and the conceptual strategies and superstrategies (Krohne, 1993).

2.1.1.9 Meaning

Lazarus (1966) states that if a future event is irrelevant to an individual’s goals (or motives) and values, the cognitive appraisal of that event will lead to an appraisal of benign characteristics as it will not harm the individual. If the future event will involve the movement toward or realisation of goals or values, appraisal of cues will result in a positively-toned emotion (Lazarus & Folkman, 1984). If cues indicate, however, that the stimulus could be harmful to the individual or could ‘thwart’ a motive, it is highly likely to be appraised as

threatening (Lazarus, 1966). In discussing degree of threat, Lazarus (1966) states that “The stronger the motive that is endangered, the greater is the potential threat” (p. 56). Dewe (2001) extends on this argument by including beliefs about the self and the world, along with understandings of personal resources as factors that will influence meaning of a threat (perhaps even unconsciously before primary appraisal).

Park and Folkman (1997) define meaning as “perceptions of significance” (p. 116), a construct with two levels: global meaning and situational meaning. Global meaning refers to a person’s enduring beliefs and valued goals, while situational meaning is the meaning formed in the interaction between an individual’s global meaning and the circumstances of the specific person-situation transaction (Park & Folkman, 1997). Global meaning incorporates two dimensions: order (which itself incorporates beliefs about the self, beliefs about the world, and beliefs about the interaction between the self and the world), and purpose (comprised of proximal and distal goals of which the individual may or may not be explicitly aware) (Park & Folkman, 1997). Global meaning is developed through early life experiences (Park & Folkman, 1997). Catlin and Epstein (1992) have found that different patterns of experiences are reflected in different patterns of basic (or global) beliefs, for example, it was consistently found that positive events in childhood were associated with favourable beliefs, whereas the opposite was found for negative events. Catlin and Epstein (1992) state that when individuals have experienced negative events, their self-view and world-view in relation to that event are generally unfavourable, the effects of which can be persistent over time.

Situational meaning brings global meaning to the interaction of a situation’s unique characteristics and the other dispositions of the individual (Park & Folkman, 1997). Park and Folkman suggest that individuals interpret situations in ways that fit with their belief systems; active coping efforts may be undertaken to ensure that beliefs are maintained, or alternatively if problem-focused coping efforts are unsuccessful or inappropriate, emotion-focused coping that

controls or reinterprets the meaning of the stressful stimulus and/or the goal at stake may be used. If used, the reappraisal process may also continue leading eventually to rumination as no successful discrepancy-reducing reappraisal is found (Pennebaker, Colder, & Sharp, 1990). Outcomes from this meaning making process can be a lack of integration or a lack of discrepancy reduction resulting from unsuccessful attempts to determine meaning, positive reconstruction or modification of global meaning systems, and/or negative changes in global meaning, for example, increased vulnerability (Park & Folkman, 1997). It is important to remember that there will be variability in the application of this model to individuals as people will vary in the degree of which global meaning is challenged, appraisal processes, and the degree to which they approach perceived discrepancies between global beliefs and situational appraisals of threat or challenge (Park & Folkman, 1997).

2.1.1.10 Conflicting motives

Lazarus (1966) defines conflict of motives as “the presence, simultaneously, of two incompatible motives whose indicated behaviours are contradictory. The expression of one in behaviour or in awareness is countermanded by the other” (p. 58). It is possible also that conflict of motives could be more complex than only two incompatible goals. For example, several motives or several aspects of two motives could be threatened by the necessity to engage in behaviours inconducive to some goals of the individual. When an individual is motivated to achieve a goal and another goal is threatened by this, this creates a situation of threat. Conflict of motives could be argued to be present in the motive to avoid literacy tasks by those with literacy issues combined with the motive to achieve educational or employment goals through attendance in an adult vocational course. The only solution to motive conflict is for the individual to give up one of the goals, or reduce the threat through defensive or self-deception reappraisal processes (Carver & Scheier, 1985; Lazarus, 1966). Lazarus states that where the strength or importance of the motives to the individual is great the degree of threat will be large

and great sacrifices will be needed to resolve the conflict.

In a related vein, Lazarus and Folkman (1984) suggest that when two or more threats and coping processes are in play at the same time, instead of the threatening encounters having an additive effect on stress and coping, they may combine in unknown ways to effectively reduce or minimise distress to an already strained system. Lepore and Evans (1996) have extended this premise by stating that the combined effects of two stressors could be expected to be additive when “one does not deplete one’s coping resources, taps a different reservoir of resources than that tapped by another stressor, or when the coping response to one stressor is independent of or does not compete with the coping response to another stressor” (p. 362). However, when a coping response affects the capacity to respond to a parallel stressor, Lepore and Evans suggest that a multiplicative effect of the stressors will be seen.

2.1.1.11 Ambiguity

Lazarus (1966) hypothesises two types of ambiguity that impact on psychological appraisals of threat and coping: (1) ambiguity concerning the nature of the confrontation; and, (2) ambiguity about what can be done to cope with the stimulus if it is appraised as harmful. Lazarus and Folkman (1984) further define ambiguity in the following statement:

Information from the environment can be unambiguous and yet a person can experience uncertainty. Such uncertainty can arise, for example, from conflicting values, commitments, and goals, and/or simply from not knowing what to do. On the other hand, even when there is ambiguity in the environment, a person can feel confident about what to do. This can happen when a person arbitrarily resolves the ambiguity by choosing an interpretation and acting upon it, refusing to acknowledge or attend to the lack of clarity in the information provided (p. 103).

Ambiguous stimuli do not necessarily result in an appraisal of threat (Lazarus, 1966). Only when a person is predisposed to be threatened by ambiguity will an appraisal of threat be likely to be forthcoming (Ladouceur, Gosselin, & Dugas, 2000). Outside of this disposition, though, other cues of harm are necessary for an ambiguous situation to be appraised as threatening (Lazarus, 1966). Ambiguity as to the agent of harm will impact on secondary appraisal processes as appropriate coping action tendencies will be either unable to be chosen or the likelihood of choosing an ineffective strategy could be heightened (Lazarus, 1966). Ambiguity also can lead to a reliance on the individual's dispositions for the appraisal more than an interaction between the situational characteristics and the person (Lazarus, 1966). Caspi and Moffit (1993) argue that ambiguous situations (among others) are primarily dominated by pre-existing personality traits. Interestingly, in some instances, ambiguity can reduce threat as flexibility in interpretations of the stimuli can result in alternative interpretations to threat of the stimulus configuration (Lazarus & Folkman, 1984).

Ambiguity is also an aspect of the novel situation as the individual does not have a clear understanding of the meaning of the encounter (Lazarus & Folkman, 1984). As Lazarus and Folkman state: "The more inference required, the greater the possibility of an error in interpretation. If the person is aware of the increased risk of error...he or she is likely to experience a high degree of uncertainty and threat" (1984, p. 84). Furthermore, the general knowledge and schematised knowledge primary appraisals of threat might draw upon to determine threat in a novel situation, may be inadequate for secondary appraisals of coping action tendency choice. In this instance, awareness of inadequacy of coping action choice appraisal may heighten threat. Folkman and Lazarus (1985) have found that in instances of high ambiguity it is not unusual for appraisals of both threat and challenge to be made which consequently can result in both negative and positive affect.

2.1.1.12 Affective responses

Affective processes are a result of the cognitive appraisal of a situation (Lazarus, 1966). It is the appraisal of threat that is the mediating variable between the stimulus and the psychological, behavioural, and physiological stress reaction. Anxiety, depression, fear, and anger have traditionally been associated with studies on stress and coping; however, recent conceptualisations have indicated the importance of ‘positive’ affects as well. Lazarus (1999) lists 15 emotions, each of which is proposed as a part of a specific secondary appraisal process: anger, envy, jealousy, anxiety, fright, guilt, shame, relief, hope, sadness, happiness, pride, love, gratitude, and compassion (p. 34). Each affect is believed to be generated via a unique appraisal process which brings with it a relational meaning that underpins each emotion, a concept called “core relational themes” (Lazarus, 1999, p. 94).

2.1.1.12.1 Anxiety

Anxiety differs from the other affects as it is a product of primary appraisal while the others are aligned with secondary appraisals (Lazarus, 1966). Traditionally, anxiety has been defined in terms of a response, and in terms of an intervening variable. As a response, anxiety refers to “the experience of a dysphoric affective state, variously referred to as anxiety, uneasiness, worry, apprehension, etc” (Lazarus, 1966, p. 65). As an intervening variable, anxiety is defined as “an inferred condition which activates behaviour instrumental in reducing it” (Lazarus, 1966, p. 66).

Lazarus (1966) notes that it is not clear if the experience of anxiety leads to subsequent coping and appraisal processes or if it is the threat of anxiety from signals or cues that result in the further coping processes. Regardless of this, Lazarus notes that anxiety (or any affect for that matter) should not be perceived as the cause of a particular coping response. Instead, the

primary appraisal of threat that is aligned with the affect should be viewed as the potential indicator of coping response.

In the case of no agent of harm being located, or when the agent of harm is ambiguous, anxiety will not be replaced by another affect as secondary appraisal processes will be uncertain (Lazarus, 1966). Anxiety can occur at several stages of the appraisal process, that is, if a defensive reappraisal breaks down this can cause threat to be appraised again, or if the coping action tendency itself is appraised as a threat this can result in further anxiety.

2.1.1.12.2 Secondary appraisal action tendencies

A basic principle noted by Lazarus (1966) is that “the nature of the affect experienced, as well as the motor and physiological reaction, depends upon the action tendency that is generated by the secondary-appraisal process” (p. 271). In Lazarus’ view there are two general classes of coping with threat. The first consists of direct action tendencies, actions that aim to eliminate or minimise the anticipated agent of harm. Of interest, while some action tendencies are expressed behaviourally, others are suppressed due to the threat that their expression would engender to the individual. There are four types of direct-action tendencies: the actions aimed at strengthening the individual’s resources against harm; avoidance; attack; and, inaction (Lazarus, 1966, p. 259). The occurrence of avoidance or attack is associated with the specific affects of fear and anger, respectively, while inaction is associated with no affect. The second class of coping pertains to reappraisal of the threat stimulus in a purely cognitive sense, which includes defensive reappraisal (Lazarus, 1966; Lazarus & Folkman, 1984).

2.1.1.12.3 Anger and attack, guilt and shame

Attack is defined as “[a]ny action tendency which is aimed at preventing the anticipated

harmful confrontation by means of an assault on the agent of harm” (Lazarus, 1966, p. 262). Attack can occur as a behavioural expression or as an impulse only. The main affect associated with the action tendency of attack is anger. Attack can be in many forms: complex or simple, physical or verbal, and/or subtle or obvious.

Different processes are suggested for directly expressed anger with attack, anger without attack, and attack without the direct expression of anger (Lazarus, 1966). The latter of these processes implies attack based on no threat (this is outside the scope of the current study). However, in the case of the first process, when a threat is appraised and the agent of harm located, the individual judges that attack is viable due to the level of power the agent of harm has (in other words, the harm agent is judged as unable to increase the threat by more than a modest amount from the current level of threat if attacked). If the harm agent is considered too powerful to risk attack, avoidance and the associated affect of fear will likely result. Attack with anger will be supported if situational constraints and internalised values and beliefs against such an approach are weak or nonexistent. In the case of anger without attack, situational constraints and internalised values against attack are powerful; attack in this instance would open the individual to more threat (higher than a modest amount) than the original condition.

The affect of guilt is defined as an action tendency that is in conflict with an internalised social norm or value (Lazarus, 1966). Lazarus argues that the action tendency for guilt is self-punishment and since the harmful agent is the individual him or herself, the action tendency will be attack on oneself (unless blame can be externalised). It is also possible that since self-attack is the action tendency of guilt that this affective and coping response would result in further appraised threat to the system, which in turn would start a secondary process of appraisal and a further coping process. In the case of shame, the action tendency is attack on the self or others (as the threat in the case of shame is to the individual’s self-esteem).

2.1.1.12.4 Fear and avoidance

Avoidance is defined as “[a]ny action which is aimed at interfering with the anticipated harmful confrontation by preventing contact with the agent of harm” (Lazarus, 1966, p. 262). Fear is the primary affect associated with avoidance (Lazarus, 1966). As with attack, avoidance can be an impulse that is behaviourally expressed or inhibited. Also, as with attack, three processes can be generally discussed: avoidance expressed behaviourally with fear, avoidance inhibited with fear, and avoidance expressed behaviourally without fear. In the case of the latter, no threat is appraised and therefore this aspect of avoidance is beyond the scope of the present study.

Following an appraisal of threat and the location of an agent of harm, the first two processes allow for the individual to judge the harmful agent as overpowering and something to avoid (Lazarus, 1966). Both processes also allow for a judgement that some means of avoiding the confrontation is at hand. In the case of behavioural expression of avoidance, situational constraints and internalised values and beliefs against avoidance are weak or nonexistent. In the case of inhibition of avoidance, situational constraints “equal or exceed in strength the original threat itself”, while internalised values against avoidance may be strong (and defensive processes that may allow a neutralisation of these values is nonexistent) (Lazarus, 1966, p. 306).

2.1.1.12.5 Apathy/Depression and inaction

Inaction is defined as a “condition where no action tendency is generated at all with which to cope with threat” (Lazarus, 1966, p. 262). Apathy and/or depression are the affects associated with inaction, the latter in the case of an appraisal of helplessness (Lazarus, 1966). Inaction by definition does not involve any consideration of any action tendencies. It is considered that the condition of inaction can only come about when the individual is in

complete acceptance that there is nothing that can be done to avoid or change the future harm, or the individual has made a successful defensive reappraisal.

2.1.1.12.6 Positive emotions

The inclusion of positive emotions as part of coping action tendencies in response to threat or challenge is a recently emerging discussion and is in response to coping research that has traditionally focused on the relationship between coping action tendencies and distress, particularly the use of emotion-focused coping strategies to predict levels of distress (Folkman & Moskowitz, 2004; Lazarus & Folkman, 1984). Stanton, Kirk, Cameron, and Danoff-Burg (2000) suggest that the relationship of emotion-focused coping and psychological distress may be due to the measurement of this construct. While (as with the COPE inventory – the tool used in the present study) coping measurement tools may include both emotional approach and avoidance items, both these item types can indicate a level of distress. For example, “I get upset and let my emotions out” (from the COPE inventory, see Carver et al., 1989), will likely share variance (and therefore be confounded) with a distress measure outcome.

Stanton et al. (1994) and Stanton et al. (2000) argue for the inclusion of an emotional-approach construct in coping measurement that is not linked with distress. To this end, items emphasising emotional approach (acknowledgement of feelings) and emotional expression, both without an implication of distress have been developed by Stanton et al. (2000). An earlier inclusion of such items in a re-development of the COPE inventory was undertaken by Stanton et al. in their 1994 work. While the inclusion of emotional approach items that are not linked to distress could be beneficial, removal and replacement of current items from the COPE to the extent proposed by Stanton et al. (1994) may be premature. In fact, an argument could be made for including both distress and non-distress associated items as removing implied distress from items could emphasise the positive aspects of emotional approach (which could then confound

with 'no distress' outcome variables).

Stanton et al. (2000) found that emotional expression was associated with higher levels of life satisfaction, hope, decreased distress, and improved health while emotional processing was found to be associated with hope, but also with increases in distress. Stanton et al. (2000) suggested that emotional processing may initially be a helpful strategy but it may become ruminative if used as a long-term means to address threat and therefore, less beneficial. This finding links with the discussion by Matthews and Wells (1996) that an attentional bias to heightened emotional arousal continuing over time can result in negative outcomes such as increased negative affect and distress variables (these findings are discussed in more detail under 'self-focus' and 'self-regulation theory').

Several studies have shown that positive emotions can co-occur with negative emotions during times of stress (Folkman, 1997; Moskowitz, Folkman, & Acree, 2003; Viney, Henry, Walker, & Crooks, 1989; Westbrook & Viney, 1982). Folkman and Moskowitz (2004) discuss the possibility that different coping strategies may be associated with either positive or negative affect. Carver and Scheier (1994) found positive emotions associated with challenge situations (for example, enthusiasm) were predicted by problem-focused coping strategies and positive reframing. Further, Stone, Kennedy-Moore, and Neale (1995) found that relaxation (a form of behavioural disengagement and/or mental disengagement) and direct action were associated with positive emotions, while distraction (also a form of mental and/or behavioural disengagement) and acceptance were associated with lower levels of negative emotion. Folkman (1997), in her discussion of the coping processes of AIDS caregivers under continuing stress, outlined that individuals will seek out positive meaning in events to increase their positive emotions as a way to provide respite from distress. She suggests this ability to find the positive is adaptive in itself as it allows for the opportunity to continue with further coping (Folkman, 1997).

A related aspect to the amalgamation of positive and negative affect as parts of the coping process, is the discussion of regulation of emotion. Emotional regulation can incorporate both conscious and unconscious processes (Folkman & Moskowitz, 2004). However, as coping only includes conscious processes in Lazarus and Folkman's (1984) transactional theory, unconscious emotion-regulation processes are considered to fall under the definition of adaptation. Hence, when discussing emotional regulation with respect to coping it is only conscious processes that are considered relevant. Gross (1998) notes two types of emotional regulation processes which are dependent on the stage of coping within which they occur: antecedent-focused regulation (which includes situation selection, situation modification, attentional deployment, and cognitive change); and, response-focused regulation (which includes response modulation). Studies of the comparisons between reappraisal (an antecedent-focused strategy) and suppression (a response-focused strategy) have shown that these different means of emotional regulation result in different outcomes with regard to memory. For example, Gross and John (2003) found that high suppressor individuals reported lower levels of memory for conversations and events than individuals who did not use suppression techniques often. Individuals who used reappraisals to deal with threat showed no differences in recall (Gross & John, 2003). These results provide support for the different roles and impacts that different emotion-focused coping strategies can have at the microanalytic level (and further the potential confounding impact they can have when grouped together as one coping style). When researchers use this latter approach, care must be taken to ensure that particular strategies within emotion-focused coping which are inversely related with other aspects are considered carefully for their impact on the final result and potential individual contributions.

2.1.2 Stages of coping

As an individual addresses a threatening stimulus, changes in their approach over time have often been viewed as a series of stages of coping (Lazarus & Folkman, 1984). Research has

suggested that for certain types of situation, for example, coping with exam pressures, different stages of the process (before, during, and after) require different coping responses (Folkman & Lazarus, 1985). However, if we take the view of Lazarus (1966) and Lazarus and Folkman (1984) individual and situational differences should mediate this, with movement through stages varying by individual and by situation. Further, it is possible that for some individuals some stages may be missed, or stages may occur in different orders altogether (Lazarus & Folkman, 1984). Silver and Wortman (1980) have shown that stage models are an inadequate explanation for emotional reactions in coping with a crisis, as there is great response variability between individuals. It should also be noted that if there is at least some similarity in the types of stages individuals go through over time, then there is an element of generality to coping approaches as well as elements of individual variation. Further, stages of coping could also represent a multitude of coping processes that are made up of the first instance of appraisal and coping, followed by feedback, reappraisal, further threat appraisals, coping processes, and so on (Lazarus & Folkman, 1984).

2.1.3 The hierarchical model

The ego psychology approach is derived from Freud's structural model of the mind that includes the functions of the id, ego, and the superego (Becker, Jimmerson, & Trail, 1982). The id is theorised to be an unconscious structure responsible for instinctual responses (Becker et al., 1982). The ego allows for a subjective reality of the mind and the reality of the external world, constructions which are developed through perception, memory, learning, and thinking (Becker et al., 1982). The superego develops as a part of the ego from the values and ideals imposed primarily during childhood which have been enforced through reward and punishment techniques (Becker et al., 1982). Essentially, Freud's model of the mind states that undifferentiated energy is released from the id, which is then channelled into appropriate responses to threat by the ego, tempered by the superego (Becker et al., 1982).

Coping strategies in ego psychology models are generally conceived as dispositional approaches based on the developmental level of the individual concerned, rather than a complex cognitive appraisal process influenced by person and situational variables (Lazarus & Folkman, 1984). Ego hierarchies imply an objective reality whereby certain types of strategies such as denial can be considered immature and even maladaptive. However, as Lazarus and Folkman point out, it is difficult to define the objective reality upon which scales of coping strategy efficacy can be adequately based, and coping strategies should not be viewed as inherently adaptive or maladaptive or indeed, positive or negative.

2.1.4 Scale approaches

Early scale theories of stress and coping differentiated between lower level coping strategies which were considered to be unconscious defensive behaviours and higher level strategies, considered to be conscious, flexible, active, and realistic coping strategies (see Vaillant, 1977). Lazarus (1966) supports aspects of this view with the claim that animals at the higher levels of the phylogenetic scale will be increasingly dependent on learning and stimuli cues that signify meanings about potential consequences to the animal in question, whereas as we descend this scale, behaviour becomes more dependent on instinctive mechanisms and the direct physical impact of stress stimuli. Further, as we move down this scale, psychological stress reactions are less evident than physiological stress reactions (Lazarus, 1966). Moreover, Lazarus (1966) claims that as we go up the phylogenetic scale, stress reactions become more varied.

Interestingly, however, it has been suggested that in situations of extreme stress, individuals that are phylogenetically at the higher end of the scale may revert in a sense to the characteristics of the lower end of the scale, responding with less variability and a decrease in cognitive efficiency (Lazarus, 1966).

2.1.5 One-dimensional and two-dimensional constructs

Two of the most commonly known one-dimensional bipolar constructs that have been used to describe coping approaches are sensitisation-repression and monitoring-blunting (see Krohne, 1996, for a review). A third related but two-dimensional construct is vigilance-cognitive avoidance (Krohne, 1993, 1996). The first two models do not claim to cover the entire spectrum of coping behaviours but instead categorise coping behaviour along a continuum between two fundamental coping dimensions (Krohne, 1996). Vigilance-cognitive avoidance differs in that people are theorised to fall somewhere along a continuum of vigilance, as well as along a continuum of cognitive avoidance (i.e. they are two separate constructs). All three, in the author's opinion, are generally similar in the meaning of their theoretical dimensions.

Vigilance is an orientation towards the threat "characterised by intensified intake and processing of threatening information", whereas cognitive avoidance is the process of distracting or removing attention from the threat (Krohne, 1993, p. 21).

Krohne (1993, 1996) argues that those who are prone to vigilance are consistently monitoring for threat information in their environments as a means to reduce or prevent uncertainty. Cognitive-avoiders, on the other hand, cope by avoiding stimuli or thoughts that induce arousal (Krohne, 1993). When individuals tend toward high vigilance and high cognitive-avoidance, Krohne calls this group "anxious", although he notes that not everyone showing this pattern will necessarily be anxious (1993, p. 28).

Tolerance to ambiguity and tolerance to emotional arousal are influencing factors on vigilance and cognitive-avoidance (Krohne, 1993, 1996). The more vigilant a person is, the more intolerant they are theorised to be with regard to uncertainty and emotional arousal, with the opposite theorised for the cognitive-avoidance group (Krohne, 1993, 1996). This could be

due to those who are more vigilant being more aware of their environments and, therefore, the cues they do not understand, as well as a heightened awareness of the affects they are experiencing. Further, individuals who choose to cognitively avoid stressful stimuli may not be aware of ambiguity in their environment nor consciously attend to their affective state to the same degree.

Those individuals that show a high intolerance of both uncertainty and emotional arousal will likely show a fluctuating coping pattern where individuals are unable to wait to see if a strategy has been effective in reducing the threat, as use of one dimension's strategies results in unacceptable levels of intolerance to the other dimension and vice versa (Krohne, 1996). Finally, those individuals that show high tolerance of both uncertainty and arousal should be able to use flexible coping strategies when addressing threat as well as maintaining use of a strategy for long enough to deem its effectiveness (Krohne, 1993, 1996). However, a low sensitivity to uncertainty and emotional arousal could also indicate a lack of coping resources in general (Krohne, 1996), particularly when paired with an avoidant coping style. In line with the views of the current author, Krohne (1993) advocates a social learning interpretation for explaining the development of particular coping modes (styles).

Similarly, the monitoring-blunting continuum has at one end individuals who engage in monitoring coping behaviours (for example, seeking information about the stressor and its potential impact) in response to a threat, and at the other, individuals who engage in blunting behaviours (such as distraction, denial, or reinterpretation) to address threat (Krohne, 1996). The use of monitoring or blunting strategies is moderated by the controllability of the stressor in question (Krohne, 1996). Blunting strategies are theorised to be adaptive in the instance of uncontrollable events, whereas monitoring strategies are considered most adaptive where stressors are controllable (Krohne, 1996).

2.1.6 Drive reinforcement model

The drive reinforcement model regards stress as a form of disequilibrium within an animal system which in turn produces strain (Lazarus & Folkman, 1984). Driven to maintain balance or homeostasis, an individual or animal must adapt in some way to the stressor (an external or internal stimulus causing the stress or tension). The idea of drive was not just applied to physical or environmental stimuli, but was also used to explain behaviours designed to result in social goals such as affiliation and achievement. The drive reinforcement model follows a stimulus-response approach and does not explain how a stimulus in the environment or internally within an individual results in a particular set of observable behaviours.

In further development of these models, the transactional model holds that: (1) no strategy should be viewed as positive or negative - the efficacy of a coping strategy can only be determined by the effect it has on the threat encountered by the individual (both internally and externally), and the effects it has in the long-term; and, in contrast to these models, (2) the coping strategy needs to be judged in terms of the context it is in (both with regard to the individual and their social and physical environment) (Lazarus & Folkman, 1984).

2.2 RELATED THEORY

A discussion of schema theory, attentional bias, self-regulation, self-focus, and cognitive-experiential self theory is outlined in the following section given their potential explanatory relevance with regard to coping processes used by those in adult educational environments. All of these approaches allow for a discussion of those factors that (if considered in the light of participation in educational environments) have allowed for the development of an understanding of self as a learner and of the capacity to cope with stress in such learning situations.

2.2.1 Schema theory

A schema is “an organised representation of generic knowledge of a common concept, event, or activity that may influence selective attention, memory, and reasoning” (Matthews & Wells, 1996, p. 575). Carver and Scheier (1981) theorise that schemata develop from common aspects derived across several similar experiences. Schemata represent habitual forms of cognition, meaning-making, and behaviour (Holland & Cole, 1995). However, this does not mean that they are necessarily static. It is important to note that schema were not proposed to be purely a cognitive construct, but as Middleton and Crook (1996) note in their comment on the work of Bartlett (see Bartlett (1995) for a full review of schema theory), schema are believed to be the result of adaptations or transactions between individuals and their physical and social environments. McVee, Dunsmore, and Gavelek (2005) argue that social and cultural aspects are the most essential factors for schema acquisition with regard to literacy practices. McVee et al. further argue that sociocultural and cognitive approaches to schema construction are “mutually constitutive” (McVee et al., 2005).

Beck (1967), in his work on the causes and treatment of depression, theorised that a self-schema held by the individual (i.e., knowledge about the individual themselves that is value-driven) can give rise to a predominance of either positive or negative beliefs in ability or capacity to cope. Particularly with reference to the latter, Beck (1967) argued that individuals with anxiety disorders and depression interpreted their capacity to cope with stress in negative ways, because of their negative self-view. These interpretations, such as helplessness in the face of stress or self-criticism, can act to confirm negative self-schema and also direct future attention to incidents where the schema is reinforced (Matthews & Wells, 1996).

Segal (1988) criticises the view of self-schema as a dichotomy of positive or negative self-views, arguing that this conceptualisation does not reflect the complexity of cognitive

construction of the self. It is acknowledged by the current author that both positive and negative self-schemata can exist in parallel with regard to the same situation. With particular reference to adult education participants of low literacy levels, negative self-schema about capability of learning may sit in parallel with positive self-schema about the ability to learn to learn (it is proposed that if a participant was completely despairing of their ability to learn they would not have enrolled in the course). In further support of this point, Carver and Scheier (1981) note that stimuli can be ranked as to their goodness of fit in any schematic category which provides a theoretical basis for why people who do not think of themselves as learners may still engage with formal learning experiences.

2.2.2 Attentional processes

Related to schema theory, Matthews and Wells (1996) argue that the coping mechanisms chosen are moderated by attentional capacity of the individual and the selectivity of that attention. As Lazarus (1966) claims, secondary appraisal processes can result in coping action tendencies designed to address either the threat or particular aspects of the threat. In the argument for the influence of attentional capacity, coping strategy selection depends on the attention that is given to finding knowledge in long-term memory that is relevant to the threat event (Matthews & Wells, 1996). Therefore, attentional capacity not only influences perception of the threat but also the mechanisms used to draw on general or schematic knowledge of such threat events.

Carver and Scheier (1981) also emphasise the importance of the availability heuristic. This principle states that if a person anticipates something or someone to be a certain way, we will tend to attend to aspects that substantiate this view (Carver & Scheier, 1981). Similarly, if a person anticipates a certain feeling, a schema corresponding to that state at either the perceptual (perceived) or conceptual (interpreted) level can be made more available, exerting a biasing

effect on the processing of subsequent information about the experience (Carver & Scheier, 1981). It is of interest that Carver and Scheier note that sometimes schema can cause incoming information to be hardly processed at all which influences the information available to the individual for determining meaning.

The capacity of the individual to attend to several aspects of a threat situation and derive a coping action tendency from drawing on possibly several schemata of relevant event types can become strained. Wells and Matthews (1994) hypothesise that task-focused strategies will require more cognitive resources than avoidance strategies; therefore, there may be a general need to avoid complex capacity-draining coping action tendencies when under stress (or perhaps under increasing levels of stress). This point is debatable as it can be argued that avoidance or particularly defensive coping reappraisals actually do imply a high complex need for cognitive capacity, not only to initially cope with the threat, but in the case of denial, for example, to maintain that interpretation in the face of evidence to the contrary. As an alternative interpretation, it may be that individuals of low attentional capacity are more likely to use avoidance coping strategies (as found by Matthews, Coyle, & Craig, 1990) not because of a need to simplify their response in terms of their attentional abilities, but because their attentional capacity has been deliberately (and perhaps unconsciously) limited as part of the coping action tendency itself. This could be due to a disposition towards defensive or avoidance coping on the behalf of the individual or a result of the coping strategies themselves (Wells & Matthews, 1994).

2.2.3 Self-regulation

Behavioural self-regulation is defined as the regulation of a system to lessen discrepancies between a current state and an ideal perceived behavioural standard (Carver & Scheier, 1981, 2000). A standard is a “particular value around which a person regulates his or her behaviour”

(Carver & Scheier, 1981, p. 186). When a person is unable to move their behaviour towards the standard, Carver and Scheier (1981) theorise that that behaviour will be suspended or interrupted. Actions taken toward reducing discrepancies between the individual and the behavioural standard is considered to be undertaken through a process of feedback loops (usually discrepancy-reducing) (Carver & Scheier, 1981)⁴. This action can result in negative affect (and potentially enhance negative self-schema and attentional biases) when the probability of reducing that discrepancy is low (Carver & Scheier, 1981). Importantly, as with Lazarus' (1966) model, the function of behaviour can only be understood by identification of the goals to which it is directed (Carver & Scheier, 2000). This model was considered of relevance to the current study as participants engaging in adult education are aspiring to a standard that differs from their current state.

Past experiences and schema associated with these standards are theorised to play a role in determining expectancies of success or failure in self-regulation (Carver & Scheier, 1981). If past experiences led to failure to minimise the discrepancy then expectancies will be negative (resulting in negative affect) for future similar discrepancies and the individual will experience a motive to avoid or withdraw from the situation (Carver & Scheier, 1981). However, if outcome expectancies are favourable to some degree (resulting in positive affect), discrepancy reduction will be attempted (Carver & Scheier, 1981). The intensity of the affect experienced is theorised by Carver and Scheier to be proportional to the importance (or commitment) to the individual of the attainment of the standard and the magnitude of the perceived discrepancy. These relationships are not definite in that locus of control, stability of the causes of the standard, importance of the situation to the individual, mood, fatigue, and balance of power can all influence the decision to approach discrepancy reduction (Carver & Scheier, 1981).

⁴ Special circumstances such as not wishing to be associated with a certain group of people can result in actions that are discrepancy-increasing (positive feedback loops) (Carver & Scheier, 1981).

The experience of positive or negative affect in response to appraisals of discrepancy are theorised to result in two outcomes if, over time, the discrepancy is not made smaller (Carver & Scheier, 2000). The first potential outcome is a decision to exert more effort, a response believed to be associated more with individuals who have entered the situation with confidence that they can resolve the perceived discrepancy (Carver & Scheier, 2000). The second outcome is a decision to remove effort; this outcome is linked by Carver and Scheier to an initial approach of doubt even if situational cues imply that with more effort there can be confidence that the discrepancy could be reduced. This theory shows similarities with the views of Eysenck and Calvo (1992) who also outline two approaches to coping with threat, for example, either coping directly through approach or avoidance, or applying additional effort towards completion of the task.

Of relevance to the current study, Thompson and Gaudreau (2008) argue that self-regulatory processes can help to explain the increase or reduction of academic motivation over the course of a semester. Coping processes are hypothesised to generate developmental change with problem-focused coping strategies to cope with challenges promoting a sense of competence and autonomy, which Thompson and Gaudreau argue fosters an internal sense of self as an academic (making the student more likely to value the academic environment as a source of intrinsic value and self-development). However, if coping processes are largely avoidance-based, Thompson and Gaudreau argue that students will fail to internalise academic activities as something they identify with themselves and, therefore, they will be more likely to remove themselves from this activity.

In Thompson and Gaudreau's (2008) study, students that showed a general positive expectancy reported participation in educational activities to pursue valued goals. These students were described as "driven by self-determined motivation" and were more likely to make use of task-oriented coping (problem-focused strategies) (Thompson & Gaudreau, 2008,

p. 283). Students with pessimistic expectations, however, reported engaging with education as a response to avoid guilt and shame, to obtain rewards or to avoid punishments, while some did not have a reason (Thompson & Gaudreau, 2008). This group of students (non self-determined motivators) were more likely to rely on avoidance-focused coping techniques (Thompson & Gaudreau, 2008). Blais, Sabourin, Boucher, and Vallerand (1990) have suggested that individuals who engage with self-determined motivation may tend to view stressful stimuli as challenges, while those without this motivation may tend to view the same stimuli as hassles or threats. This difference suggests a higher level of stress, or at least negative affect associated with the latter group. In a related result, Aspinwall and Taylor (1992) found that high self-esteem and psychological control predicted higher levels of academic motivation and higher grades.

2.2.3.1 Self-focus

Related to schema theory and attentional bias, Carver and Scheier (1981) discuss the concept of self-focus within the larger model of self-regulation. Self-focus is defined as the “extent to which attention is predominantly directed toward the self as opposed to external events or internal thoughts unrelated to the self” (Matthews & Wells, 1996, p. 578) and concerns selective attention to information that is generated from within the self and concerns the self (Carver & Scheier, 1981). The hypothesised relationship between self-focus and coping behaviours is as follows (Matthews & Wells, 1996; Carver & Scheier, 1988): self-focus should increase problem-focused coping when discrepancy reduction is likely to be successful; when discrepancy reduction is considered unlikely, behavioural and mental disengagement (type of avoidance strategies commonly aligned with emotion-focused coping) should be seen along with a reduction in problem-focused coping strategies (indeed Scheier, Carver, & Gibbons, 1981, have found that highly self-focused individuals are more likely to engage in avoidance behaviours following a threat appraisal). Increased attention to internal states (as is the onus of

high self-focus) suggests increased emotion-focused coping (Matthews & Wells, 1996). Due to the general finding of a need for confidence among low literacy individuals when beginning an adult vocational course (Eberle & Robinson, 1980; Neubauer & Dusewicz, 1988; Ross, 1987; Tilley et al., 2006), a tendency toward a high self-focus combined with low confidence should show a dispositional pattern of avoidance and emotion-focused coping strategies in times of stress, even in situations where there are opportunities to undertake problem-focused approaches (Matthews & Wells, 1996). Interestingly, Strack, Blaney, Ganellen, and Coyne (1985) found, in a sample of depressed individuals, that task performance was enhanced by problem-focused strategies regardless of whether the individual expected their performance to be successful. This result suggests that there could be a difference between confidence in self and confidence in the approach taken; that is, a depressed individual may have negative expectations of their outcome on a task but still use appropriate strategies to perform the task successfully. However, their interpretation of their own influence on the performance of that task may be overtly negative when compared to another non-depressed individual. Matthews and Wells (1996) propose that the effect of self-focus on coping responses is moderated by attentional capacity and success expectancies (the latter of which may in the present author's opinion be based on self-esteem or confidence in oneself as opposed to confidence in the approach). In a related view, Carver and Scheier's (1981) theory of self-regulation holds that expectations of success with regard to a goal can allow individuals to maintain effort toward that goal even in the face of setbacks (as an example, Scheier, Weintraub, & Carver, 1986, found a positive correlation between optimism and problem-focused coping). However, if expectations of success are low, the result can be reduced effort and sometimes complete disengagement.

Kanfer and Stevenson (1985) found that self-focused individuals showed impaired learning performance and lower rates of persistence in completing tasks when compared to non-self-focused individuals. These authors claimed that the predominance of emotion-focused coping required through self-regulation processes influenced by high self-focus, impaired the ability to

engage in problem-focused coping strategies (Kanfer & Stevenson, 1985). Matthews and Wells (1996) also hypothesise that task-directed performance can be impaired by the amount of attentional capacity required to develop plans of action which, in the case of a complex task, could result in cognitive resource overload. If a person with high self-focus is more likely to give substantial attention to their emotional reaction, it is proposed that attention can be split between the emotional arousal and plans for problem-focused coping leaving little capacity for task-related coping plans (Matthews & Wells, 1996). Therefore, Matthews and Wells argue there should be a general negative association between self-focus and problem-focused coping. Indeed, Carver and Scheier (1981) argue that avoidance coping strategies may be used more often by those with high self-focus as the resource demands they place on the individual are perceived as lower than the demands that could be placed by problem-focused strategies.

Heppner, Witty, and Dixon (2004) showed that individuals with negative appraisals of their problem-solving capabilities tended to lack persistence in finding solutions to problems, were less motivated to problem-solve, avoided their problems, felt powerless in dealing with interpersonal stressors, and tended to act impulsively. However, there are always exceptions to general rules. Matthews and Wells (1996) point out that an individual with high self-focus may still implement a complex problem-focused strategy to perform a task of value. However, the attentional capacity of this individual is still theorised to be less than optimal (considering its hypothesised split between emotional regulation and task-focus) resulting in a higher likelihood that the problem-focused strategies will not be implemented as effectively as they might have been given a lower tendency for self-focus (Matthews & Wells, 1996).

Examples of self-focus research of particular relevance to the current study are offered by research into test anxiety (or academic evaluative anxiety). Wine (1980) argues that self-focus can cause individuals who are test anxious to fail to attend fully to their task performance, resulting in performance deficits. Carver and Scheier (1981) argue that a discrepancy between

an individual's current state and a standard that cannot be reduced will result in negative affect (see Kashdan & Roberts, 2004), a narrow focus for attentional capacities, and an attempt to withdraw (either physically or mentally) from the environment.

Differing results have been found as to whether individuals of differing levels of test anxiety experience the same degree of emotional arousal. Holroyd and Appel (1980) found that emotional physiological arousal across low and high test-anxious participants was similar (although self-reported arousal was not) and therefore did not impact differentially on task performance, whereas Hembree (1988) in his review of test anxiety research, found that perceived-physiological emotionality was a significant influence on task performance (although this was often less important than the cognitive aspect of worry). The role of heightened psychological affect in performance deficits associated with self-focus and subsequent attentional factors seems to be important. Carver and Scheier (1981) hypothesise, however, that self-focus will enhance awareness of heightened affect.

Carver and Scheier (1981) suggest that it is the unfavourable expectancy judgment that leads to impairment of performance rather than heightened self-focus in test anxious individuals. Their argument is that test anxious individuals that do not withdraw eventually return to the task but perhaps do not attempt the task at the same level of effort or attend fully to the information needed to do so as they do not expect to do well (Carver & Scheier, 1981). However, it is unclear from this theory where the unfavourable expectancy has been sourced from. For example, it may be possible that an unfavourable expectancy has resulted from a heightened self-focus.

With regard to persistence in educational situations (another interest of the present study) Carver, Peterson, Follansbee, and Scheier (1983) found that highly test anxious participants under conditions of self-focus were less likely to persist in a task they were being evaluated for

and their performance was also adversely affected (in comparison to participants with low test anxiety levels).

Much of the research on self-focus has been conducted with clinical samples and has been experimental and laboratory-based. Matthews and Wells (1996) suggest that in non-clinical samples, high self-focus may not necessarily be detrimental or be found to be so generally negative in coping with everyday threats and stressors. Further, research that is experimental and laboratory-based has usually required hypothetical situations and the experimental manipulation of self-focus conditions generally through the use of mirrors or audiences. This introduces limitations to the transfer of findings to self-focus as it occurs in natural environments.

2.2.4 Cognitive-Experiential Self Theory (CEST)

Cognitive-experiential self theory (CEST) provides an explanation for how individuals acquire and maintain negative self-schemata (Epstein, 1992). This theory has implications for use with understanding individuals with low levels of literacy who often report low self-esteem and low confidence when first beginning an adult mode of study (Eberle & Robinson, 1980; Neubauer & Dusewicz, 1988; Ross, 1987; Tilley et al., 2006).

Epstein (1992) outlines the theory as follows: In CEST, an individual's activity is based on four motives: to maximise the favourability of their pleasure-pain balance; to assimilate information from reality into a coherent conceptual system; to maintain relatedness; and to maximise self-esteem. Individuals have two conceptual systems, one rational and one experiential. The rational system processes information according to rules of logic, while the experiential system rapidly and automatically assesses information and directs behaviour. The experiential system is more holistic, emotional, and outcome-focused than the rational system.

Schemata in the experiential system are organised in two divisions – a self theory and a world theory. It is argued that as inferences about the self (and indeed the world) are contained within the emotional experiential system, these inferences can be irrational.

Negative self-schemata are developed through life experiences. Epstein (1992) gives the example of withdrawal of love and attention from parents when a child that can lead the individual to feel they are inferior and unworthy of love. In the instance of individuals with low literacy levels, several studies have found a general dislike of formal learning environments due to feelings of inferiority from earlier rejection and failure experiences at school (see Berg & Lick, 2001; Murray et al., 2007; Tilley et al., 2006; Tilley et al., 2007). These schemata serve as a basis against which new experiences are interpreted, which, Epstein (1992) argues, results in irrational overgeneralisation. Negative overgeneralisation is defined as “the degree to which bad outcomes engage a tendency to bring thoughts of personal inadequacy to mind and/or experience a reduction in the sense of self-worth” (Carver, Ganellen, & Behar-Mitrani, 1985, p. 727). While irrational (perhaps to others), the individual believes the negative overgeneralisation is an accurate assessment of themselves (Epstein, 1992). Epstein (1992) argues that negative schemata are automatic processes and interpret experiences and direct behaviour in ways that hurts an individual’s self-esteem, all at a low level of awareness.

Interestingly, those who maintain a negative self-view are thought to be regulating their pleasure-pain principle by minimising negative affect rather than increasing positive affect (Epstein, 1992). In other words, they maintain their negative self-perception and subsequently low expectations of their success in endeavours to avoid or minimise the impact of failure (Epstein, 1992). Dweck’s (1986) review of problem-solving and persistence in children showed that in performance evaluation situations, a high level of confidence was needed for a child to engage and persist in challenging tasks. Children who were strongly oriented to performing well tended to avoid challenges or to have impaired performance in the face of such challenges

(Dweck, 1986). Interestingly, Dweck's (1986) study showed that when learning goals (such as up-skilling) were held by the child (as opposed to performance goals) this focused the child on effort.

Individuals with low literacy levels that participate in adult vocational courses generally have high aspirations for their future employment and education (Neubauer & Dusewicz, 1988). This suggests that this group did not develop negative self-schema to the extent that those of low literacy who do not participate in adult vocational courses did (assuming upskilling is identified as a need), or they have found a means to challenge these self-messages (or have developed a strong motive for learning) to allow them to participate. It also suggests that indications of failure or rejection in performance in the course may act as a higher stressor to those at the lower end of the literacy continuum than those at the higher end.

2.2.5 Criticisms of coping measurement

O'Driscoll and Cooper (1994) list five issues for consideration in the field of coping measurement: 1) measurement of coping styles versus coping strategies; 2) specificity versus non-specificity of coping responses; 3) deductive versus inductive approaches to assessing coping; 4) general stressors versus specific stressors; and, 5) predetermined versus elicited stressors.

With regard to the first of these issues, Trenberth et al. (1996) suggest that if the aim of the study is a cross-sample comparison, coping styles should be measured. However, if the aim is to explore the unique characteristics of a particular group then context-specific process approaches should be used. Dewe and Trenberth (2004) outline two schools of thought on coping measurement: 1) questionnaire measurement as a first step to understanding coping practices within a particular sample or population (as with the current study); and, 2) in-depth case studies

which are more “clinically relevant” to develop an understanding of particular coping strategies, stress, appraisal, and meaning for one or more specific individuals. The present study is focused on providing general cross-sample comparisons (relevant to all low literacy individuals in adult vocational courses) as a first step to understanding the relationship between literacy and coping; therefore, a dispositional coping style and strategies measurement approach has been chosen. Lazarus (2000) claims that traditional coping assessment methods, such as questionnaires, are appropriate first steps toward exploring new areas of stress and coping research. While he acknowledges these methods do not allow an in-depth view of the goals and intentions behind the coping behaviours, the methods do allow for a “quantification of the coping process, which under some circumstances is useful and important” (Lazarus, 2000, p. 666).

Krohne (1996) argues that microanalytic coping strategies are problematic not least because their factor solutions are unstable, changing by sample and situational context. This does make it difficult for comparability across samples and studies. However, the author of the present study argues that these findings should not be considered problematic, but instead a reflection of reality. It is the writer’s conception that situational coping at a microanalytic level should not be considered stable, particularly across situations and sample changes. It is to be expected that different samples and different situational contexts will show differing coping strategies. However, it is expected that at a macroanalytic level (aggregated through the types of microanalytic strategies) there would be some consistency or stability seen within the same sample across different situations, and particularly within the same situation type among the same sample.

Krohne (1996) also argues that interrelationships between coping strategies are often unclear in terms of their conceptual level equivalence. Some strategies are very specific, such as substance abuse, whereas others such as behavioural disengagement are more general (Krohne, 1996). Particularly in situational analyses, the use of particular strategies (or indeed the items

that make up a strategy) may not be endorsed equally given the preference to apply different behaviours at different time points of coping with the stressful encounter (Krohne, 1996). It is also important to acknowledge that supposedly different coping strategies may serve the same function in different situations (Lazarus & Folkman, 1984). This implies that while correlations between coping strategies used in different situations may be low, the purpose and consequences of the coping strategies used may be similar. These criticisms outline valid limitations of current coping inventories when used as situational measures.

Lazarus and Folkman (1984) developed the Ways of Coping Questionnaire (WCQ) as a means of measuring dispositional coping styles as related to specific situations. Krohne (1996) argues that the Ways of Coping Questionnaire is generally not reflective of the process-oriented transactional stress and coping theory upon which it is based, as it assesses dispositional styles. Krohne argues that dispositional coping style measurement results in highly generalised responses that do not allow researchers to learn much about the particular coping strategies an individual may use in any particular situation. This is a valid point and supported by evidence of low correlations between dispositional coping styles/strategies and situational accounts of coping strategy use (for examples see Carver & Scheier, 1994, or Carver et al., 1989). However, as outlined by Lazarus (1966) and Lazarus and Folkman (1984), dispositional and situational measures of coping are the two pieces of the coping puzzle. While an individual may report particular styles of coping in general, these are reports of general coping aggregated across multiple types of situations and therefore may have little relevance to particular situation types.

Epstein (1979) suggests that the best means to measure the stability of personality traits is not by questionnaire but instead through the aggregation of multiple situational assessments per individual across a variety of situations. Epstein (1979) concludes that the low correlations seen between traits and specific behaviours is due to comparisons of a range of samples of behaviour in the former instance, with single instances in the latter (which are susceptible to high levels of

measurement error). It is the author's opinion that it would be ideal to aggregate situational accounts of coping over the same general type of situation to determine dispositional coping approaches by situation type (at a broad level, for instance, work or study). Schwartz, Neale, Marco, Shiffman, and Stone (1999) estimate that when a dispositional style estimates 20% of variance in coping responses in a particular situation at least 16 situational reports of coping behaviours will be needed to achieve 80% reliability in predicting situational reactions from dispositional aggregated styles.

The second issue, specificity and non-specificity of coping responses, refers to the ability to link specific stressors with specific coping responses. O'Driscoll and Cooper (1994) argue that inventory measures currently available do not allow for these relationships to be explored. However, Frederickson and Dewe (1996) in their study of work stressors and coping found no direct link between particular workplace stressors and ways of coping instead arguing that it is the meaning of the event (particularly its importance, the level of frustration experienced, and the associated affect) that determines the response.

The third issue, deductive versus inductive assessments of coping, forms one of the key debates for coping researchers. Thomaes (1987) argues for the use of semi-structured interviews in the measurement of coping responses claiming that questionnaire inventories break the coping process into tiny pieces exceeding the memory capacity of participants to check these items. While semi-structured interviews allow for an understanding of the function and use of particular coping strategies (as well as an indication of strategies not covered in any one inventory), other authors argue that coping inventory items serve as cues that allow participants to remember more about their coping processes than they would if information was self-reported (Carver et al., 1989; Folkman & Lazarus, 1988).

Stone and Neale (1984) outline that the use of different coping items in self-report

questionnaires does not allow for an assessment of the intention of the action. In contrast, Laux and Weber (1987) present two criticisms of using questionnaires with intent made explicit in items: 1) It may be too hard for participants to specify intent for every coping response, and 2) retrospective assessment can mean that intents are misinterpreted or changed. Stone and Neale further criticise coping inventories as unable to act as an indicator of the specific meaning or function an individual will adhere to a particular coping strategy. Laux and Weber extend this argument by theorising that an individual could also ascribe several functions to one item.

The fourth issue, general stressors versus specific stressors, refers to stress measured either as a general construct across situation types or stress measured within a specific domain such as work or non-work settings (Wearing & Hart, 1996) or in one specific situation. This issue has been outlined in previous paragraphs. The fifth issue, predetermined versus elicited stressors, refers to hypothetical stress situations used in coping measurement as opposed to phenomenological definitions of stress. Hypothetical instances of stress allow for consistency across participants but introduce the limitation that the incident could not be meaningful or stressful to the individual concerned (Dewe & Brook, 2000). Phenomenological examples of stress address this limitation but introduce variability in stress experience and intensity reported by participants (Dewe & Brook, 2000).

2.2.6 Emotional intelligence

As a part of the current study, the construct of ‘adaptability’ was measured to provide an understanding of flexibility in response to change in participants’ general lives. The measure used was a subscale of the larger Emotional Quotient Inventory: Short Version (EQI: S) (Bar-On, 2002), an emotional intelligence inventory. A synopsis of emotional intelligence is provided here to briefly describe the relationship it holds with stress and coping.

Emotional intelligence can be defined as perceiving, understanding, and expressing emotions and involves identifying own and others emotions, regulating and modifying mood to fit the situation, and improving our own emotions and associated cognitions (Mayer & Salovey, 1997). Emotional intelligence as assessed by the Trait Meta-Mood Scale (TMMS) was significantly positively correlated with positive reinterpretation, active, planning, and social support coping strategies (Gohm & Clore, 2002). Individuals with higher emotional intelligence scores are more likely to be focused on their affective reactions and regulating these reactions, however, interestingly, they are not likely to engage in avoidance coping strategies in response to threat (Gohm & Clore, 2002). This suggests that the relationship between focus on emotional states and distress outcomes may be moderated by emotional intelligence variables. Salovey, Bedell, Detweiler, and Mayer (1999) outline that as focus on emotions increases, distress states such as ruminative thoughts and anxiety increase as well.

With specific regard to the adaptability subscale of the emotional intelligence measure used in the current study, access to a range of coping strategies and implied flexibility of coping strategy use have been associated with improved emotional adjustment (Mattlin, Wethington, & Kessler, 1990). However, Carver et al. (1993) argued that a number of coping strategies in play in response to any one threat could be ineffective and inefficient.

2.2.7 Multiple stressors

Much coping and stress research discusses these concepts as separate and the process that relates them is discussed as occurring in a vacuum from other stressful incidents (Lepore & Evans, 1996). This is often due to the necessity of focusing on one stressor and its associated appraisal and coping processes for the sake of clarity. However, multiple stressors do occur frequently and Lepore and Evans note that two or more stressors can co-occur. These stressors can be unrelated, causally related, or stem from a common underlying cause but appear

unrelated (Lepore & Evans, 1996). It is also argued that some individuals may be more susceptible to multiple stressors due to their social status or social roles (Lepore & Evans, 1996), for example, individuals with inadequate literacy levels are generally a group largely found in the lower income bracket and lower socio-economic grouping (OECD, 2000). Threat in the environment of those with inadequate literacy levels such as an increased need for literacy practices at work could lead to stress with regard to undertaking work. This, related to stress associated with maintaining income, will add to the stresses of daily life the individual may have already been facing prior to this realisation.

It has been argued that exposure to multiple stressors can allow individuals to develop coping resources and strategies to better address subsequent stressors (Lepore & Evans, 1996). This is based on the assumption that past experience has a positive effect on subsequent coping with similar stressors (Lepore & Evans, 1996). It is suggested that early exposure and mastery over particular stressors can inoculate the individual from future harm associated with those stressors, however, this is based on self-report data only which may introduce a limitation of individuals reporting only instances of successful coping (Lepore & Evans, 1996).

Lepore and Evans (1996) discuss a model that outlines the costs and benefits of certain types of coping responses in response to multiple stressors. The model of the costs of coping includes: stereotypic coping – overgeneralisation of a coping behaviour to diverse situations even when it is ineffective; behavioural constraints – when a coping response to one stressor is unable to be used with another this can lead to frustration and helplessness; residual arousal or fatigue – coping with one stressor increases arousal or fatigue which reduces an individual's capacity to respond to other stressors; resource depletion – when resources are depleted they are not available for coping with subsequent stressors; helplessness – a belief or expectancy in a lack of control when coping with a stressor can lead to emotion-focused coping strategies in situations where problem-focused strategies may be more effective. Failure to achieve the

required result can increase the negative consequences of these actions; reappraisal – occurs when the perception of the threat is increased and coping capacity is decreased when the stressor co-occurs with another.

The model of the benefits of coping (Lepore & Evans, 1996) includes: resiliency – previous contact with the same or similar stressors that have been responded to effectively can result in feelings of mastery and transfer of the successful coping responses from one stressor to another thereby reducing their impact; resource mobilisation – when resources are able to be accessed quickly they may intervene more quickly or effectively to minimise the impact of an adverse stressor (further, perceiving control over a stressor might increase an individual's coping flexibility); reappraisal – in this instance, the perception of threat is decreased and coping capacities increased.

Linear additive combinations of multiple stressors do not necessarily equate to level of strain. Trenberth and Dewe (2006) in their sequential tree analysis of work stressors and their relationship to work strain noted that similar mean scores of stressors did not mean similar experiences were had by participants. Trenberth and Dewe's results suggest that different levels of strain may well have had a common 'trigger event', but different strain levels were associated with different patterns of stressors (p. 208).

2.2.8 Personality characteristics

In the coping literature, coping dispositions and personality traits are sometimes confounded. An overview of personality characteristics is provided here to outline the positioning of this construct with regard to coping dispositions for the present study.

Personality can be defined as “a system defined by personality traits and the dynamic

processes by which they affect the individual's psychological functioning" (Costa et al., 1996, p. 48). McCrae (1992) has argued that preferred ways of coping have their basis in personality traits with certain traits predisposing individuals to cope with stress in certain ways. The five factor model of personality includes the following broad categories: Neuroticism (negative affectivity vs. emotional stability); Extraversion (dominance vs. introversion); Openness to Experience (intellect, culture vs. conventionality); Agreeableness (friendly compliance vs. antagonism); and, Conscientiousness (will to achieve vs. indirectness) (McCrae & John, 1992). These broad constructs can be viewed as a higher abstract ordering of the person characteristics that interact in the stress-coping process. Other personality and trait constructs that have been related to coping have included optimism (Scheier et al., 1986) and locus of control (Roberto, 1992). Subsumed within these higher-level constructs (or traits) is the mid-level of dispositions (or coping styles) which are at a higher abstract level respectively than the coping behaviours that are used in actual situations (Amirkhan, Risinger, & Swickert, 1995).

Costa et al. (1996) state that small correlations should be seen between broad personality factors and specific coping strategies, while coping styles and personality traits should show larger associations. However, a recent meta-analysis of the relation between personality and coping found that of 2,653 effect sizes, 165 samples, and 33,094 participants, personality was weakly related to broad coping styles, but each of the Big Five traits were able to predict specific coping strategies (Connor-Smith & Flachsbart, 2007). Scheier et al. (1986) showed, for example, that optimism was positively associated with planning and suppression of competing activities (both problem-focused strategies), while pessimists tended to use emotion-focused strategies such as focus on and venting of emotions and disengagement. In parallel results, Fleishman (1984) argues for a specificity of influence when discussing the effects of personality on coping behaviours. Fleishman showed that personality traits such as self-denial were associated with the coping behaviours of passive acceptance and reinterpretation; nondisclosure was related to seeking advice; mastery was associated with problem-focused coping functions

but only in the areas of work and finance with its impact on marriage and parenthood weak. Fleishman argues that this latter finding may be due to the perceptions of individuals as to the ability to control non-social versus social environments. Wearing and Hart (1996) found Neuroticism was significantly correlated with the emotion-focused coping style in both work and non-work domains, but not problem-focused coping. Extraversion was also found to be significantly correlated with problem-focused coping in both domains (but not emotion-focused coping) (Wearing & Hart, 1996). It is argued that the connection of personality dispositions and coping styles suggests a stable disposition for coping approach over time, however, Wearing and Hart acknowledge this predisposition is influenced by several factors including observational learning, development of cognitive processes, and the person-environment interaction.

In contrast, however, personality traits were found to more strongly predict coping in samples where dispositional coping styles were reported than situation-specific coping reports (Connor-Smith & Flachsbart, 2007). These seemingly conflicting results may reflect the differences in analysis technique used rather than a difference of association.

The traditional approach of investigating the association between personality constructs and dispositional coping styles and strategies was based on the assumption that certain coping strategies were stable phenomena that derived from personality (Schwarzer & Schwarzer, 1996). While a number of studies have sought to associate personality attributes with coping styles and strategies (or the mediating effect of personality constructs on the relationship of coping style/strategy and outcome), direct correlations reported have been modest, although coping styles have shown some moderate to strong relationships with personality traits (see Amirkhan et al., 1995; Carver et al., 1993; Endler & Parker, 1990; Gallagher, 1990; McCrae & Costa, 1986; Parkes, 1984, 1986; Scheier et al., 1986). Because the majority of studies do not show more than a moderate correlation between coping styles and personality traits in general

(although specificity of personality trait impact on coping strategies show more promising results), Schwarzer and Schwarzer (1996) and Carver et al. (1989) suggest that stable coping dispositions or preferences may develop from sources other than personality. It is possible that personality is only a partial source of the development of coping styles, just as dispositional coping styles based on person factors are only a partial influencing source on coping strategy (Carver et al., 1989).

Caprara (1987) argues that instead of using the term ‘consistency’ when discussing dispositional and situational aspects and all that that implies, ‘coherence’ at this inferential level should be used instead. Caprara notes that construct validity refers to the coherence of the conceptual framework, content validity to the specificity of the visible situations and behaviours, and internal validity to the congruity of the connections between these hypothetical constructs and the perceived behaviours and situations. This brings to mind an understanding that while not ‘consistent’, dispositions and situations can be understood to show similarities (even if not highly correlated) at this higher general level. At the observational level for behaviours and situations, Caprara suggests the notions of specificity and stability should be used allowing therefore an understanding of how the behaviours and situations interact in practice in stable and situationally-specific ways. Finally, Caprara suggests the concepts of contingency as well as congruity for discussing the connections between behaviours and dispositions, and contingent situations and classes of situations, that is, dispositional means of coping with classes of situations can be contingent on means of coping with specific situations but are not necessarily consistent. Caprara does still seem to be looking for some stability amongst constructs; however, it is the author’s opinion that this stability will never be found except at the broad level of analysis which will never strongly correlate to the specific level. Caprara argues that different levels of analysis, while they focus on different aspects of the same phenomena, are not reducible one to the other. While he is referring to the phenomenological and aetiological levels of analysis, it is the author’s opinion that this argument could also be

applied to the dispositional and situational levels of analysis.

Caprara (1987) argues that dispositions (in this sense, he refers to personality dimensions) do involve reference to the environment and imply “not only a range of responses but also a range of situations” (p. 5). Dispositions should allow us to look at how the person-situation interaction develops in terms of perception, emotional response and action, stability over time and situation, and change over time and situation (Caprara, 1987). Caprara argues that: “A correspondence is likely between responses and situations on the basis of a predisposition of the individual organism to meet with a certain environment and to conform to it in accordance with certain patterns of behaviour. A correspondence is also likely between responses and situations on the basis of the selective demands of the former on the latter” (p. 5). Caprara argues for “extreme flexibility” in the amount of variance that can be determined to come from either dispositional or situational factors in any one incident, and laments the lack of awareness of the need for such flexibility in studies that discuss dispositions and situations as polar opposites.

2.2.9 Dispositional and situational influences

As outlined previously, dispositions are general, stable properties of the individual and include coping style and general coping strategies (Lazarus, 1966; Lazarus & Folkman, 1984). Situational understandings focus on the actual coping behaviours in use in a particular situation. Dispositional strategies are usually conceptualised at a macroanalytic level of general styles, while situational approaches are microanalytic strategies (Krohne, 1996). The more microanalytic the description of coping strategies, the more likely it is that cross-situational variability of use of these strategies and low test-retest correlations will be seen (Krohne, 1996).

Dispositional ways of coping are likely in several circumstances. Thomae (1987) states that the history of the person and her/his past experiences including certain response strategies if

they hold a history of reinforcement, are more likely to be chosen for use in particular stressful situations. Thomaes outlines that coping responses are not completely context-dependent and in some instances may be the result of learned habits and preferences. Strack and Feifel (1996) have suggested that personality traits may impact on the coping repertoire of an individual, for example, an individual high in introversion may be unlikely to find social support seeking as an adaptive coping response (in fact, it could be viewed as a threat). It is likely that someone predisposed to introversion is unlikely to seek social support across many coping situations fitting with Thomaes's understanding. To further substantiate this point, Carver et al. (1989) suggest that individuals may cope better with stressful stimuli when they are able to make use of familiar strategies they have used often in the past. However, when aspects of the situation make those strategies unavailable or unworkable, coping is proposed to be less effective or perhaps less efficient (Carver et al., 1989).

The dispositional argument challenges a constant level of flexibility in choice of coping behaviours put forth by Lazarus and Folkman (1984) although these authors do ascribe to some level to Thomaes's (1987) interpretation. It may be that some situations require little new environmental input and therefore dispositional approaches may predominate. Further, it could be that in ambiguous situations, dispositional approaches may predominate due to the lack of understanding of new situational cues, that is, a fallback to the default position in cases where threat is appraised but not understood. However, where environmental cues are not greatly ambiguous and usual means of coping are not open to the individual, situational influences on coping approaches will likely predominate.

McCrae (1992) reported correlations between coping strategies across different stressors of threat, loss, and challenge. These correlations ranged from nearly no correlation (-.01) to moderate correlations (.59) with a median of .29. In a prior study, McCrae (1989) found that across time, coping mechanisms showed test-retest correlations that ranged from -.10 to .60,

with a median of .26. Overall, the small-moderate correlations across time and across stressor provide support for the influence of dispositional coping styles on coping mechanisms. However, these correlations are not strong, suggesting that dispositions do not completely explain the choice of coping mechanisms by stressor or across time. This finding is not unexpected given the assumptions of the transactional model of stress and coping. Schwarzer and Schwarzer (1996) note that high test-retest reliability contradicts the understanding of coping as a variable process, however they state that higher levels (although these might still be only moderate correlations) can be expected when the same individual is compared over time on the same kind of stress.

Situational influences on coping action tendencies have been argued by Folkman and Lazarus (1980, 1985) and Folkman et al. (1986) to be the factors that introduce intraindividual variability into the coping mechanisms evidenced in any secondary appraisal of threat. Carver et al. (1989) in their development of the COPE scale argued that coping style as a concept can be counterproductive when it locks the individual into one mode of responding across situations. Coping styles as proposed by Lazarus and Folkman (1984) however, that have flexible properties of differing strategies that can be used in differing amounts in differing situations or stages (as seen in Carver et al.'s (1989) COPE inventory), as well as the ability for both problem- and emotion-focused coping styles to be used within the same encounter by the same individual, allows for a conceptualisation of coping strategies and dominant coping style that can change by situation. Folkman and Lazarus (1980) state that situational coping strategies are usually not generalisable cross-situationally, with intraindividual analyses showing that participants were more variable than consistent in their coping patterns across situations. It may be, as has been indicated previously, that certain situations or types of stressors can be consistently associated with certain coping styles within a particular individual or across individuals. In other words, certain types of stressful stimuli may invoke particular classes of coping strategies within a predominant coping style. This is not to say that other coping

strategies or styles will not be present, however, some consistency should be seen within situation type. Folkman and Lazarus (1980) provide some support for this notion in their findings that coping responses to stressors within work contexts show a predominance of problem-focused coping strategies, whereas health contexts show a predominance of emotion-focused strategies.

Carver and Scheier (1994) suggest that the simplest way in which coping styles may influence situational coping is through a main effect, in other words, a particular coping style will be displayed through coping strategies at every phase of the transaction regardless of relevance. However, this is unlikely given the variability seen in individual approaches to situations and the counter-productiveness of stereotypical approaches to coping (Carver et al., 1989; Lepore & Evans, 1996). Carver and Scheier (1994) suggest a more subtle possibility is that dispositional styles influence situational coping strategies at one part of the transaction but not at others (or perhaps different styles at different stages). Carver and Scheier (1994) found 32 out of 39 correlations between dispositional styles and situational strategies in the same stressful situation were significant, although they were small (between .20 and .35). These authors also found that the dispositional and situational reports shared between 4-12% of their variance. However, the religion and alcohol use strategies were highly related sharing approximately 50% of the variance. Terry (1994) also found that strategies used in a first instance of coping with a stressful stimulus predicted the coping strategies used in a second instance, accounting for 6-13% of the variance. Terry (1994) also found that after controlling for stable influences, the situation type and situational appraisals were significant predictors of the type of coping response used. Schwartz et al. (1999) found that momentary (situational) reports of coping were associated with dispositional reports, sharing between 15-30% of variance. These authors argue that the association between dispositional and situational reports is too low for the former to be used as a proxy for the latter. However, they propose that dispositional coping styles should be viewed as the average means of coping that an individual will take part in across situations, that

is, sometimes dispositional coping styles will predominate while at other times they will seem to have little impact. This is in contrast to the preferred modal interpretation that some researchers ascribe to (Schwartz et al., 1999). Schwartz et al. (1999) also propose that coping dispositions could be defined as those behaviours that an individual engages in during at least 30% of situations appraised as threatening and stressful.

Going back to the transactional model of coping, it is necessary to view dispositions as one part of the puzzle of coping strategy choice and implementation, with situational factors (the interpretation of which is dependent on an interaction with dispositional factors) playing an equally important role (Lazarus, 1966; Lazarus & Folkman, 1984). Some cross-situational consistency in coping strategy use will be seen, while discrepancies will also be apparent. Pearlin and Schooler (1978) studied stressors of individuals in four everyday social roles (marriage partner, household manager, parent, and worker) and found that while a broad range of coping strategies were used to cope with stressors in these situations, there were certain similarities across situation type. An interpretation of these findings is that some coping strategies are used across individuals generally for coping within social role stress situations, while others are used only in reference to a specific stressor or situation (Pearlin & Schooler, 1978).

2.2.10 Changes over time

Caprara (1987) suggests that to understand changes that occur over time within the same individual with regard to coping strategy use there is a need for the inclusion of an understanding of the development of that individual over time. This implies that not only do situations change (in fact a situation can never be exactly the same as those that have preceded it (Lazarus & Folkman, 1984)), but dispositions can change as well as the individual matures and is exposed to a range of learning situations. Laux and Weber (1987) claim that one assumption

of the transactional model of stress and coping is that coping is variable depending on the context and therefore coping approaches will change over time as contexts change. In line with Caprara's (1987) observations, dispositions (or the level of use of certain styles of coping) could be hypothesised to change over time within certain types of situations, if the individual themselves has changed/developed in some way in the interim.

Each coping process, it is hypothesised, feeds back into evaluations of the approach changing overall dispositions (over long periods of time) and specific approaches (over short periods of time) (Caprara, 1987). As Laux and Weber (1987) note "stability within coping processes might also arise from 'traditional' personality variables, but those variables by no means exclude the search for stable behaviour patterns or styles of coping behaviour itself" (p. 198).

Laux and Weber (1987) distinguish between temporal stability (consistency in dispositions or traits across time in similar situations) and cross-situational consistency (consistency in dispositions or traits across time in dissimilar situations). These authors argue that temporal stability is stable (not static); however, cross-situational stability is not (Laux & Weber, 1987). Similarly, Stone and Neale (1984) found that when participants coped with the same problem over a number of occasions, they tended to be consistent in their overall manner of approaching this problem. Thomaes (1987) suggested a construct termed 'response hierarchies' (a group of possible behavioural responses) to represent the range of coping responses possible by a certain individual. Thomaes further suggested that these hierarchies be used as indicators of response consistency over time for the same group of people. Use of this approach resulted in the finding of a high degree of consistency over time when responding to the same situation type (Thomaes, 1987). It has also resulted in a finding of flexible use of response hierarchies (and selective use) in the case of situations that differ over time (Thomaes, 1987). Thomaes explains his results in terms of the impacts of social roles and norms. In transactional theory, it is these social roles

and norms that equate to strong values held by the individual. In this sense, these dispositional values can be considered as equally influential on consistency.

2.3 COPING STYLES AND FUNCTIONS

In this section, the terms ‘style’ and ‘strategy’ are sometimes used interchangeably. Styles where used are taken to mean a group of related coping strategies that can be subsumed under one general dimension. Strategies can refer to discussion of specific strategies individually, or in the case of, for example, ‘problem-focused strategies’ the term refers to those strategies that make up the problem-focused coping style.

2.3.1 Limitations to cross-study comparisons

The composition of coping styles (usually problem-focused and emotion-focused coping) across studies is hampered by the different strategies per study sample that are proposed to make up each style. The strategy ‘positive reinterpretation’, for example, is discussed generally in research as a consistent construct, however, the means by which it is measured in different coping assessments, for example, two of the most well-known coping inventories, the Ways of Coping Questionnaire (WCQ) and the COPE differ (Carver et al., 1989; Lazarus & Folkman, 1984). Even within assessments, coping style and strategy composition differ. For example, the COPE assessment tool is made up of 15 subscales with four items each (Carver et al., 1989). The dispositional styles of problem-focused coping and emotion-focused coping are developed sample by sample (Carver, n.d.). While overall Carver et al. (1989) suggest five scales for each style group in the discussion of the scale’s development, the remaining five scales can differ in their group membership by study. Research has also developed factor models of coping styles from the COPE that include three and five factor solutions (Carver et al., 1989; Zuckerman & Gagne, 2003). Further, the strategies or subscales themselves are often not consistently applied;

for example, some studies use the full 15 scale COPE (such as the current study) while others use the brief version (Zeidner & Hammer, 1992), some use only a few of the strategies of particular interest (see Burker et al., 2005; Eisengart et al., 2006; Sweet, Savoie, & Lemyre, 1999), some use some subscales from one instrument and others from another (see Montes-Berges & Augusto, 2007; Thompson & Gaudreau, 2008), and others may use all the subscales but delete one or two items from each subscale to make the overall instrument shorter (see Carver et al., 1993). These inconsistencies in approach are a limitation of the COPE that needs to be taken into account when reviewing the research presented below.

A further limitation to the development of broad coping styles is the argument that the different coping strategies that make up each coping style may in fact have different implications for coping adaptiveness (Zeidner & Saklofske, 1996). It is important to note that problem-focused functions can be achieved through emotion-focused strategies and vice versa (Zeidner & Saklofske, 1996). Scheier et al. (1986) point out that the characteristics of strategies housed within a particular style can be so distinct that they can be inversely correlated in some samples. It is proposed that if coping styles are to be developed, the meaning and function of the strategies in question need to be investigated so as to construct general categories that provide meaningful summaries of the strategies themselves (Zeidner & Saklofske, 1996).

2.3.1.1 Coping styles and coping strategies

In line with the transactional model and the stage process model of coping, use of particular coping strategies will naturally vary and change over time as different aspects of the response to the threat require different approaches or periods of inaction (Zeidner & Saklofske, 1996). It is important to note that most people employ both problem-focused and emotion-focused coping strategies to address any one threat, allowing for both active management of the stressor and emotional regulation (Zeidner & Saklofske, 1996). Indeed, Folkman and Lazarus (1980) found

that of over 1300 episodes of stress reported by middle-aged community residents, 98% were addressed through a combination of problem-focused and emotion-focused coping techniques. Folkman and Lazarus (1985) reported a similar figure of 96% for a sample of college students. Carver and Scheier (1994) argue that emotion-focused coping can facilitate problem-focused coping by removing some of the negative affect that can hamper problem-focused approaches, while problem-focused coping strategies can allow a threat to be reduced in magnitude allowing for less need to use emotional management strategies. In summary, while there may be a predominance of one coping style over another in dispositional measurement, both styles will be evident to some degree. Further, certain coping strategies may be predominant but the importance of each strategy will fluctuate dependent on the stage of the coping process and the particular characteristics of the threat and the situational context within which it is based (Folkman & Lazarus, 1980).

Thoits (1986) argues for a model of stress buffering which proposes two modes of altering responses to stressful stimuli, behavioural means and cognitive means. Thoits takes this further to suggest that these mechanisms can be seen in the two dominant modes of coping style – problem-focused coping and emotion-focused coping. Behavioural problem-focused coping is defined as actions that directly address or alter the threat, whereas cognitive problem-focused coping acts by altering the cognitions of the threat, for example, via positive reappraisal. It is argued that this cognitive approach (generally viewed as an emotion-focused coping strategy) is actually task-oriented when used appropriately such as when a situation is uncontrollable or current resources are such that initial disengagement is needed (Thoits, 1986).

In the same vein, behavioural emotion-focused coping can be evidenced in expressive gestures (Thoits, 1984), behavioural incidences of emotional physiological sensations, for example, smoking, or behavioural disengagement (Carver et al., 1989). Cognitive emotion-focused coping may include mental disengagement (Carver et al., 1989) or positive

reinterpretation of an undesirable state to one with less negative connotations (Thoits, 1986). The inclusion of positive reappraisal and reinterpretation in both cognitive mechanisms across coping styles implies that in studies of coping styles the impact of strategies measuring positive reappraisal may require further investigation as to the intention of such behaviours (and their relationships to other task-focused strategies) before allocation to a problem-focused or emotion-focused construct.

Similarly, Moos and Schaefer (1993) proposed two key approaches to coping: approach and avoidance (similar in nature to problem-focused coping and emotion-focused coping respectively). These authors also support the breakdown of each factor into two, a cognitive component and a behavioural component resulting in four categories: cognitive approach, including positive appraisal, analysis of the problem, and seeking of alternatives; behavioural approach, which consisted of seeking instrumental and emotional social support, planning, and active coping; cognitive avoidance, including mental disengagement and acceptance; and, behavioural avoidance, including behavioural disengagement (Moos & Schaefer, 1993).

Costa et al. (1996) argue that problem-focused coping strategies are likely to be highly specific to the situation, whereas emotion-focused coping strategies are more general in nature and therefore should be more consistent across situations. As problem-focused coping as a style includes strategies such as active coping, suppression of competing activities, restraint, planning, and use of instrumental social support (to use the COPE assessment tool as an example), these are likely to be situation-specific as different strategies of approach will be used dependent on what the situation requires and is able to provide in terms of resources. Emotion-focused coping strategies, however, include largely internal processes (that can also have behavioural expression) and may not be so dependent on the situation in order to be used. For comparison purposes, the COPE assessment tool suggests use of emotional social support, positive reinterpretation and growth, denial, acceptance, and turning to religion as emotion-

focused coping strategies (Carver et al., 1989). As a support to this position Felton and Revenson (1984) and Aldwin and Revenson (1987) have reported that problem-focused coping strategies have been found to have a moderating influence on the impact of a stressor (particularly at moderate-high levels of threat) on subsequent wellbeing (an interaction effect), while emotion-focused coping strategies tend towards having a generalised approach or similar effects regardless of the type or degree of threat (a main effect). Aldwin and Revenson (1987) state that emotion-focused strategies may be reflective of the impact of personality or dispositional factors due to a lack of interaction effects with the stressor situation variable. Problem-focused coping strategies, however, as they do interact with situational variables, may be interpreted as being more dependent on situational makeup (Aldwin & Revenson, 1987). Aldwin and Revenson hypothesise that the weighting given to the variables of person or environment in interaction under stress may differ dependent on whether problem-focused or emotion-focused coping strategies are used. However, the support for these findings is mixed.

Researchers have also proposed a third type of coping, avoidance-focused coping which involves strategies of disengaging mentally and physically from threat (Endler & Parker, 1990; Carver et al., 1989). In the COPE assessment, the avoidance-focused coping style is proposed to include the strategies of mental disengagement, behavioural disengagement, denial, humour, and alcohol and substance use (the two latter subscales were added after the original development of the COPE (Carver et al., 1989)). If using this conceptualisation, the emotion-focused coping style would be made up of use of emotional social support, positive reinterpretation and growth, and focus on and venting of emotions (the latter being a subscale added after the original development of the scale (Carver et al., 1989)).

In a general sense, problem-focused coping has been found to be predictive of positive outcomes (Billings & Moos, 1981; Endler & Parker, 1990; Mitchell, Cronkite, & Moos, 1983; Vitaliano et al., 1990), but has also been associated with negative affect (Bolger, 1990; Carver

& Scheier, 1994; Mattlin et al., 1990). Avoidance coping (such as denial and withdrawal tendencies) has been found to be associated with non-adaptive outcomes such as psychological distress, particularly in the long term (Aldwin & Revenson, 1987; Carver et al., 1993; Stanton & Snider, 1993; Suls & Fletcher, 1985), but has also been shown to have positive effects, for example, Pearlin and Schooler (1978) reported that coping strategies which increased the psychological distance between the individual and the problem were most effective when dealing with economic or occupational stressors. Emotion-focused coping (including self-blame and avoidance through fantasy) was found to positively correlate with reports of distress (Ben-Zur, 2005; Endler & Parker, 1990), although it is important to remember that distress outcomes and emotion-focused coping item measurement based on distress have the potential to be confounded. In a study of individuals with depression, Billings and Moos (1985) found that increases in problem-focused strategies and less emotional expression were associated with lower depression levels and fewer physical symptoms after one year. However, emotion-focused coping such as acceptance and positive reinterpretation strategies have been found to have positive effects on outcome distress measures (Carver et al., 1993); (see ‘specific coping strategies’ below). It is possible that at least initially, especially when dealing with threat, a period of avoidance or emotion-focused coping may be beneficial (Carver et al., 1993; Suls & Fletcher, 1985). With time, however, Suls and Fletcher (1985) found that use of non-avoidant strategies was generally associated with more positive outcomes. An exception to this is the work of Terry and Hynes (1998) who found that emotional approach coping was positively associated with better adjustment for women over time with regard to a low control stressor – a failed in-vitro fertilisation attempt. It is important to remember that different strategies within an overall style may have different functions (perhaps even opposite functions) to the rest of their general grouping which can result in different outcomes when the strategies are investigated separately.

Active or approach coping (which generally come under a problem-focused coping style)

are considered to be more likely in circumstances where the individual feels the threat, aspects of the threat, or aspects of the response to the threat can be controlled and there is a perceived likelihood of success (Carver et al., 1989; Folkman et al., 1986; Scheier et al., 1986). Emotion-focused and avoidance coping strategies are more likely to be used in situations appraised as unchangeable, uncontrollable, or when a stressor must be tolerated (Folkman & Lazarus, 1980; Folkman et al., 1986). Carver et al. (1989) noted that this relationship was only seen in the subscales of acceptance and denial. Emotion-focused coping strategies were found to be positively related to depression when a stressor was considered changeable (Vitaliano et al., 1990). Problem-focused strategies (in terms of active coping with the stressor) have been linked to an internal locus of control (Parkes, 1984). However, active coping strategies have also been found to vary in effectiveness dependent on the level of stress experienced. Crockett et al. (2007) found in their study of the acculturative stress of Mexican American college students that active and social support coping strategies resulted in less anxiety and depressive symptoms than those who did not use such strategies but only under conditions of high stress. Under low stress, active coping did not buffer this relationship and students reported higher levels of anxiety than the comparison sample (Crockett et al., 2007). Crockett et al. propose an explanation that perhaps at lower levels of stress more demands are made of the individual than at times when it is apparent to their family and friends that they are under a high amount of stress, thereby contributing to an increase in negative affect.

2.3.1.2 The COPE inventory

The COPE inventory (Carver et al., 1989)⁵ will be described here as this scale was used in the current study. The COPE scale is made up of 15 subscales with the problem-focused coping

⁵ This section draws heavily on the work of Carver et al. (1989). Paragraphs that are drawn from Carver et al.'s (1989) findings begin with a citation of this work and all following sentences in that paragraph are attributable to these authors, unless attributions to others are made.

style proposed to include strategies such as active coping, suppression of competing activities, restraint, planning, and use of instrumental social support. Emotion-focused coping strategies are proposed to include use of emotional social support, positive reinterpretation and growth, denial, acceptance, and turning to religion. Later, subscales measuring what Carver et al. termed less adaptive strategies, that is, mental disengagement, behavioural disengagement, focus on and venting of emotions, substance use (of which one item was in the original COPE), and humour were added.

Active coping is defined as “the process of taking active steps to try to remove or circumvent the stressor or to ameliorate its effects” (Carver et al., 1989, p. 268). This construct is similar to Lazarus and Folkman’s (1984) problem-focused coping; however, further categories are included to allow for a level of specificity such as planning (cognitive approach of thinking about what strategies to use and how to approach the problem), suppression of competing activities (putting other projects aside so that focus is maintained on the threat at hand), restraint (waiting until the appropriate time to act), and seeking of instrumental social support (seeking of advice, assistance, and/or information) are included in Carver et al.’s conceptualisation of problem-focused coping.

Coping strategies included in Carver et al.’s (1989) emotion-focused coping are described in more detail here. The use of emotional social support includes processes such as obtaining moral support, sympathy, and/or understanding from others. Carver et al. have separated this purpose of seeking social support from the instrumental reasons due to the premise that they are conceptually distinct; however, it is acknowledged that they often co-occur. For example, social support could be sought not only to gain moral support but also to gain resources to approach the stressor (or alternatively, emotional social support can be so effective as to allow the individual to then move into using problem-focused coping strategies). As with all the coping strategies the use of emotional social support cannot be constructed as an adaptive or

maladaptive coping style without first considering its function. However, it is generally accepted that a focus on emotions for long periods of time may not be adaptive in the long-term (Felton, Revenson, & Hinrichsen, 1984). Carver et al. suggest that focus on distress can increase distress as well as distract individuals from active coping or lock them into a mode of coping approaches when other strategies may be more useful.

Positive reinterpretation and growth (which can also be termed positive reappraisal) is aimed at managing negative emotions rather than directly addressing the stressor (Carver et al., 1989). However, this strategy is argued to have an indirect effect on problem-solving as reinterpreting a threat or stressor in a positive way could lead to the problem being viewed as more of a challenge than a threat and perhaps a movement toward more problem-focused strategies. Further discussion of this strategy is outlined under 'Specific coping strategies'.

Denial is operationalised in the COPE scale as reports of refusal to believe the threat exists or cognitions that act as if the stressor is not real (Carver et al., 1989). Denial as a function can be conceptualised in three different ways: denial may lessen distress; denial may result in the threat becoming more serious due to it being ignored; and, denial is a useful strategy at the initial stages of the coping process, but becomes an impediment if used long-term.

Acceptance is a concept that bridges both problem-focused and emotion-focused styles and its function is dependent on the type of acceptance used (see 'specific coping strategies' for further discussion of this point). Carver et al., (1989) note that the function of acceptance as an acceptance of reality would imply a person engaged to approach the stressful event, whereas when acceptance is a function of an absence of active coping strategies to deal with the situation it may imply a need for emotional regulation and hence, emotion-focused coping. Carver et al., suggest that acceptance is particularly important when situations must just be accommodated to rather than changed.

The turning to religion subscale is operationalised as a general tendency to turn to religion in times of stress (Carver et al., 1989). Turning to religion is classed as an emotion-focused strategy as it implies management of emotions rather than active coping efforts (although in the latter case if a threat is appraised to religious beliefs, turning to religion may be an active coping strategy).

Mental disengagement is a class of activities that distract the individual from thinking about the threat (Carver et al., 1989). This construct can include distraction with alternative activities (such as sleeping or watching TV) and/or daydreaming. This category has been found in other studies to have low internal consistency ratings (see Zeidner & Hammer, 1992). Carver et al. postulate this is because it is a multiple-act criterion rather than a unitary set of behaviours.

Behavioural disengagement is defined as “reducing one’s effort to deal with the stressor, even giving up the attempt to attain goals with which the stressor is interfering” (Carver et al., 1989, p. 269). This type of coping strategy is theorised to most likely occur when outcomes are expected to be poor.

Focus on and venting of emotions is operationalised as general feelings of upset and expression or heightened awareness of those affects (Carver et al., 1989). This strategy has been found to be negatively associated with a perception of something constructive being able to be done as well as negatively associated with an internal locus of control. Substance use is operationalised as the use of alcohol or drugs to escape the stressor, while humour is defined as the use of jokes in relation to the threat with the implication that these strategies distract attention from the threat and potentially seek to reduce negative emotions associated with the stressor.

Interestingly, the more meaning associated with a particular threat (or the more that was at

stake for an individual), the more the individual reported use of focus on and venting of emotions, denial, and emotional and instrumental social support strategies (Carver et al., 1989).

Zuckerman and Gagne (2005) introduced three new subscales to the COPE to sit alongside the traditional amalgamation of approach and avoidance styles: self-help (including expressing emotion, understanding emotion, and seeking support), accommodation (including acceptance, optimism, and positive reframing), and self-punishment (including self-blame). Zuckerman and Gagne (2005) found that these new subscales were better prospective predictors of self-esteem, mood, and health than approach and avoidance. Of relevance to the current study, work on student academic performance showed that approach and accommodation strategies led to an increase in perceived competence in educational settings, while avoidance strategies decreased this competence perception as well as being associated with low GPA scores (Zuckerman & Gagne, 2005). Self-punishment was found to consistently predict negative outcomes potentially due to the impact of rumination on interference with more appropriate problem-focused coping techniques (Lyubomirsky, Tucker, Caldwell, & Berg, 1999).

2.3.1.3 Specific coping strategies

Positive reinterpretation or positive reappraisal is a strategy that bridges both problem-focused and emotion-focused coping (Carver et al., 1989), and coping process and coping outcome definitions (Park & Folkman, 1997). Dunkel-Schetter, Feinstein, Taylor, and Falke (1992) found that positive reinterpretation was associated with less emotional distress in cancer patients. Scheier et al. (1986) found that positive reinterpretation was positively associated with optimism and negatively correlated with denial and disengagement. Park, Cohen, and Murch (1996) found that positive reinterpretation was positively correlated with positive outcomes in terms of growth and perceived benefits to the individual, however it is unclear how to separate the process of working towards growth from the growth outcome. Park and Folkman (1997)

also argue that growth as an outcome can occur while the coping process of positive reinterpretation is occurring, which further complicates this relationship. Folkman et al. (1986) suggest that positive reappraisal may facilitate problem-focused coping or situational factors that facilitate problem-focused coping could elicit positive reinterpretations.

Acceptance is another coping strategy that appears to bridge both problem-focused and emotion-focused conceptualisations. Acceptance refers to the ability to “face reality even if it does not fit one’s expectations or desires, and the willingness to deal with this reality nevertheless” (Nakamura & Orth, 2005, p. 282). Scheier et al. (1986) found that acceptance was positively related to optimism when situations were viewed as uncontrollable. Scheier et al. suggest that the predisposition to acceptance rather than denial or disengagement in the case of a stressor that must be endured may therefore allow for more optimistic appraisal of options for future wellbeing.

Acceptance has been found to be a predictor of psychological wellbeing and adaptation with breast cancer patients (Carver et al., 1993) and active acceptance was associated with enhanced adaptiveness to renal disease (active acceptance included not allowing the disease to take over the individual’s life) (Wright & Kirby, 1999). However, Wright and Kirby make the point that those patients who engaged in passive acceptance (gave up activities and allowed the disease to control their lives), by contrast, showed lower levels of adaptiveness to their illness and lower levels of wellbeing. Griffin and Rabkin (1998) also found that acceptance was positively correlated with hopelessness and depression. Nakamura and Orth (2005) do make a distinction between active acceptance and resigning acceptance, stating that the former is an acceptance of a lack of control which is characterised by removal of all attempts to control the stressor and a focus on other meaningful events in life. The latter is acceptance with abandonment of active coping in other areas of life which leads to the individual becoming immersed in negativity (Nakamura & Orth, 2005). Resigning acceptance has been found to correlate positively with

denial coping strategies and, along with non-acceptance is generally associated with negative health outcomes (Nakamura & Orth, 2005). Nakamura and Orth claim that acceptance is an emotion-focused coping strategy given that change is not possible and therefore acceptance is about relinquishing control. However, the findings cited above imply that acceptance combined with a perhaps unfounded sense of control over other areas or aspects of disease (i.e., its effects on mood) can lead to improved wellbeing over those that engage in acceptance but feel they have no control. A further influence on the association of acceptance with negative outcomes such as distress could be that the items that make up the scale of acceptance need to be reviewed as items that involve an element of despair for the future may be confounded with distress outcomes (Nakamura & Orth, 2005).

Acceptance has been viewed as a means of accommodating to the stressor (Carver et al., 1989). A moderate correlation ($r = .52$) has been found between approach strategies and accommodation strategies suggesting that these two general approaches measure similar functions (Zuckerman & Gagne, 2005).

Another interesting finding relates to the interrelationship between acceptance and avoidance strategies. Feldner, Zvolensky, Eifert, and Spira (2003) noted that emotional avoidance was positively correlated with higher levels of anxiety and psychological distress. Nakamura and Orth (2005) present a possible explanation of findings of this nature through an experiential avoidance model. They claim that if an individual is “experientially open” and accepting of their emotional response rather than attempting to control it through avoidance, they may experience better psychological outcomes (Nakamura & Orth, 2005, p. 282).

According to Carver et al. (1989) the social support subscales ‘use of instrumental social support’ and ‘use of emotional social support’ can also bridge the two main coping styles. Researchers have argued that the seeking of social support can have two functions: 1. Social

support can be sought for emotional reasons, for example, to vent frustration; and, 2. Social support can be sought for instrumental reasons, for example, to obtain resources from others, that are not held by the individual, to actively approach the stressful problem (Thoits, 1986). Carver et al. proposed the separation of these two constructs in the COPE tool, and not unexpectedly, studies have found that both social support subscales contribute to coping in related but distinct ways (Skinner, Edge, Altman, & Sherwood, 2003; Thoits, 1986). Theoretically, however, Carver et al. argue for the placement of ‘use of instrumental social support’ with the problem-focused coping strategies, and ‘use of emotional social support’ with emotion-focused strategies.

2.4 SUMMARY

The heightened level of stress that educational environments are hypothesised to place on those with low literacy levels formed the basis of the current study. The above review has discussed the key theoretical concepts and practices of coping with stress in an attempt to place the concerns and experiences of adult literacy learners within the theoretical understandings of the stress and coping field. The following chapter discusses the theoretical basis of adult literacy training approaches and seeks to draw together the psychological and educational fields.

CHAPTER THREE – ADULT LITERACY: A REVIEW

3.1 THEORETICAL UNDERSTANDINGS

One aspect of adult education is adult literacy. This area of education has been a focus for many since the International Adult Literacy Survey (IALS) was conducted throughout 22 countries over the period from 1994 to 1998 (OECD, 2000). The IALS investigated the functional literacy level of working age adults (15 to 65) in terms of prose, document, and quantitative literacy, and also investigated other demographic and social indicators. The IALS found that many of the countries surveyed had significant proportions of their populations at an inadequate level of literacy skill for today's knowledge economy (OECD, 2000). These findings went against previous ideas that adult reading, writing, and numeracy skills were not in need of improvement in developed first-world countries.

Literacy as a concept can be generally viewed in two ways: the ability to read and write to *know* (viewed here as the formal school model); and the ability to read and write in order to *do things* (functional literacy) (italics added; Hull, 2000). Hull argues that there are actually seven broad functions of literacy: to perform basic literacy functions; to explain; to take part in discussions about texts; to communicate information; to problem solve; to participate in critical appraisals; and, to exercise or resist authority.

Hull (2000), like Lonsdale and McCurry (2004), also supports a third conceptualisation of literacy, the socio-cultural model. This model states that literacy is shaped by participation within social practices, therefore, there are several differing types of literacy, leading to the term 'literacies'.

Four main approaches have led to the development of the above literacy and numeracy models. These four approaches comprise the basic skills or functional approach; the growth or heritage approach; the critical cultural approach (or social practice approach), and the social capital approach (Falk & Millar, 2002). The first of these, the functional approach, defines literacy as a technical skill, such as, the skill of reading, writing, or numeracy. This is the understanding of literacy that is explored in the present study; however, a short summary of each approach is provided here for descriptive purposes.

The ‘functional’ approach refers to the ability to use literacy skills to perform certain tasks in domestic or work life. In this understanding, literacy and numeracy skills are the foundation for other functions, therefore they can be taught in a generic fashion, and are assumed to be transferable across contexts. Problem solving, abstract thinking, the ability to generalise, and critical reflection on thinking or actions have often been viewed as a higher-order skill in the psychological literature (Kirsch & Jungeblut, 1986; Mezirow, 1996). These higher-order skills are believed to be achieved only when a fundamental skill and knowledge base has been laid.

The growth and heritage approach to literacy focuses primarily on the comprehension of meaning rather than the technical approach proposed by the functional perspective (Falk & Millar, 2002). Here, literacy development is a social process, where the emphasis is on the relationship between meaning, the literacy texts and objects, and the social context, as opposed to just the text. Reading and writing activities are situated within environments and experiences that are meaningful to the learner so that comprehension is achieved.

The critical cultural view of literacy states that literacy is social practice and is socioculturally and politically situated (Falk & Millar, 2002). Here, the primary purpose of literacy is one of greater understanding of a learner’s world, challenging of dominant discourses, and, perhaps even social justice movements (Falk & Millar, 2002). This approach is

the basis of a movement called the New Literacy Studies (NLS). In NLS, there are multiple literacies, all of which have social, personal, educational, and political implications. This view of literacies is often associated with discussions of power and marginalised societal groups.

Finally, the social capital approach to literacy stresses the importance of social networks in learning (Falk & Millar, 2002). Trust is believed to act as the catalyst for transfer of informal generic learning within social networks (Falk, 2001).

Kirsch and Jungeblut (1986) outlined four stages in the development and measurement of literacy. The first of these was literacy as the ability to sign one's name on legal documents and was measured in the general population by self-report in census documents (Kirsch & Jungeblut, 1986). The second stage was school-based literacy where literacy was defined as the ability to perform specific reading and writing tasks largely devoid of societal function and meaning (Kirsch & Jungeblut, 1986). The third stage was functional literacy which emphasised the use of reading and writing skills to function in different roles in society (Kirsch & Jungeblut, 1986). The fourth stage positioned literacy as a social phenomenon, dependent on the demands of a particular society or culture and the interactions between the individual and society (Kirsch & Jungeblut, 1986).

Kirsch and Jungeblut (1986) advocated the merging of functional literacy with the idea of literacy positioned within a sociocultural context by defining literacy as functional literacy skills that serve a purpose in achieving a person's goals within society. This overall definition is used in the IALS survey (OECD, 2000). Rather than categorising people as either literate or illiterate, Kirsch and Jungeblut (1986) devised a scale of literacy tasks of increasing levels of difficulty proposing that individuals would fit along this continuum (in support of this approach Kirsch and Jungeblut (1986) found that only two percent of the population was likely to be classed as illiterate with others falling somewhere along the continuum). The measure also included

different continuums for three different types of literacy: prose, document, and quantitative; an attempt to acknowledge the multidimensional nature of literacy skills (Kirsch & Jungeblut, 1986). This approach is used in the IALS assessment (more detail is provided in the following section).

Neubauer and Dusewicz (1988) argue that literacy must be viewed in terms of the skills necessary to function in society. This definition states that the type of literacy skills needed are dependent on society's standards, needs, and the individual's roles within that society (Neubauer & Dusewicz, 1988). The IALS assessment tool seeks to address this approach through presenting levels of functional literacy that relate to the needs of the current and future proposed knowledge economy (OECD, 2000).

Criticisms of the functional approach to literacy measurement include that it places too much emphasis at the level of discreet skills. Levine (1990) writes: "Although the ability to read is a desirable asset in some situations, the exercise of skills like reading labels and instructions, or filling out forms, has a limited capacity to reduce social deprivation or directly to remedy disadvantages such as unemployment, low pay, or inadequate housing" (p. 434). It is the opinion of the author that this conceptualisation of literacy as an entity that should directly improve a multitude of life and societal problems is a dangerous overgeneralisation. It is known that while functional literacy skills such as reading, writing, and numeracy are needed, the individual learner needs further skills in other aspects of his or her life (such as enhanced communication skills, budgeting ability, presentation skills, computer literacy, and perhaps a diverse range of coping strategies to name a few) to be fully prepared for employment, further study, and other societal roles (Murray et al., 2007; Tilley et al., 2006). However, it is necessary to begin with the basic building blocks at the level of measurable skills before higher-order competencies can be attained. While measurement of literacy at the level of functional skill sets is only one part of literacy or literacies, it is also a crucial first part that should not be ignored.

3.1.1 Autonomous model of literacy (functional literacy)

The reports resulting from the IALS all strongly recommended a focus on improving functional literacy skills as the key to unlocking the benefits of globalisation (Black, n.d.; OECD, 2000). The IALS definition of literacy encompassed viewing literacy as a set of technical skills, relatively autonomous of social context (Black, n.d.), the definition being: “the ability to understand and employ printed information in daily activities, at home, at work, and in the community – to achieve one’s goals, and to develop one’s knowledge and potential” (OECD, 2000, p. x). This view of literacy has been termed the autonomous model. It has also been termed ‘functional literacy’ and defines literacy within three domains: prose literacy (“the knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures, and instruction manuals”); document literacy (“the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables, and charts”); and, quantitative literacy (“the knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, figuring out a tip, completing an order form, or determining the amount of interest on a loan from an advertisement” (OECD, 2000, p. x). The autonomous model of literacy encourages the view of literacy as a functional skill, usually measured in terms of level of capability on tests of reading, writing, or numeracy skill, with higher literacy levels usually found to positively correlate with a higher likelihood of employment, higher income, and higher socioeconomic status (Lee & Miller, 2000; OECD, 2000). The IALS specifically measures literacy in each domain on a continuum ranging from a score of zero to a score of 500 (or levels one to five). Membership at a certain level allows that the individual has an 80% chance of successful performance of the tasks within that level (OECD, 2000). Specific definitions of each level of performance are as follows:

Level 1: persons with very poor skills, where the individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on the package

Level 2: respondents can deal only with material that is simple, clearly laid out, and in which the tasks involved are not too complex. It denotes a weak level of skill, but more hidden than Level 1. It identifies people who can read, but test poorly. They may have developed coping skills to manage everyday literacy demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills

Level 3: Considered a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society. It denotes roughly the skill level required for successful secondary school completion and college entry. Like higher levels, it requires the ability to integrate several sources of information and solve more complex problems

Levels 4 & 5: Respondents who demonstrate command of higher-order information processing skills (OECD, 2000, p. xi).

Many policy understandings of literacy have been based on the autonomous model. Literacy and numeracy skills are viewed as the means by which people are equipped with the basics to build on for learning throughout life (Bynner, 2002). Street (2003) argues that the autonomous model of literacy assumes that literacy can be removed from its social context and treated as a technical and neutral skill. He goes on to argue that the autonomous model suggests that the introduction of literacy will enhance learners cognitive skills and make them “better citizens” of society (Street, 2003, p. 77). The dominant approach holds that without these foundations, the ability to attain qualifications and employment are restricted, and global economic

competitiveness of industries is at stake (Bynner, 2002). With the advent of the 'knowledge economy', Bynner claims, has come changes to skill needs in industry, with basic literacy skills now needed where people could 'get by' before. Bynner discusses his birth cohort study where a cohort born in 1958 mostly gained unskilled or semi skilled jobs, with some gaining training and moving into skilled jobs. Approximately two-thirds of those born in 1970, however, perhaps at the beginnings of a knowledge economy, would enter training schemes or became unemployed (after leaving school at the minimum age). Of the one-third who achieved employment, there was little job security or training on offer and they tended to experience unemployment. Bynner (2000) also found that those in the very low literacy group received less vocational training than those with higher literacy levels. Also, those with both poor literacy and poor numeracy showed the lowest employment rates across the ages of 16-37.

The associations noted between literacy and employment (and literacy and other economic and social factors) have led to a belief that enhancement of literacy skills (defined in a functional, autonomous sense) can lead to enhancement of employment opportunities, higher skilled employees for the benefit of industry, and better socioeconomic conditions for the individuals involved. While literacy is one piece of this puzzle, the author acknowledges that other wider skills must also be addressed in concert to increase the potential of enhanced outcomes.

3.1.2 Criticisms of the IALS

While the IALS has highlighted the prevalence of literacy levels of the adult populations of many countries around the world, its methodology and approach have been criticised by some. Hamilton and Barton (2000) state three main criticisms: the IALS provides only a partial picture of literacy; culture is treated as bias; and the test items do not represent the real-life items as claimed. Hamilton and Barton adhere to the NLS approach, a belief that literacy only has

meaning within its particular context of social practice and does not transfer unproblematically across contexts. Literacy practice can be defined as the “socially regulated, recurrent, and patterned things that people do with literacy as well as the cultural significance they ascribe to those doings” (Brandt & Clinton, 2002, p. 342). This is in contrast to the IALS approach which assumes consistency of skills across contexts, for example, the skill of reading is the same when reading a book in a library, as opposed to reading a poster in a noisy street.

Hamilton and Barton (2000) argue that there are different literacy practices in different domains of social life, such as education, workplaces, and the community. It is argued that these differences can help reveal the meanings, values, and uses that literacies have for people in their everyday lives and that this understanding of different contexts must be taken into account when discussing literacy (Hamilton & Barton, 2000).

The issue of culture as a bias is contested by Hamilton and Barton (2000). It is argued that in the IALS the tasks are seen as culturally-neutral which in Hamilton and Barton’s view does not take into account the complexities of cross-cultural comparisons. Any literacy practice that is not recognised beyond a particular cultural group was not used to generate test items for the IALS as this would constitute cultural bias (OECD, 2000). However, the NLS perspective sees literacy as constituted by its cultural context (Hamilton & Barton, 2000). Therefore, in searching for cultural neutrality it is argued that the IALS moves away from the factors that are essential for understanding literacy, making the test items not real life tasks, but proxy measures of literacy (Hamilton & Barton, 2000). Hamilton and Barton argue also that the IALS makes generalised claims about causality from descriptive correlations and differences, and question its appearance of objectivity by stating that it does not allow other research paradigms to interpret the results in their own ways.

In discussing the proposition that literacy as tested in the IALS is not equivalent to real-life

items, Hamilton and Barton (2000) argue that the levels 1-5 used are arbitrary and are not based on people's actual lived practices. The authors' state that an individual's own judgment of their literacy proficiency is more positive and while the IALS reports this as self-delusion (OECD, 2000), Hamilton and Barton argue that the IALS is measuring something other than everyday literacy practices.

Hamilton and Barton (2000) conclude that the IALS is really measuring "artificially constructed *test literacy*, sampling a transnational culture and tapping people's participation in the global economy. However, the IALS provides useful general correlations and statistics that can help governments to target aspects of their population who are low in literacy" (as has been measured by the IALS and which Hamilton and Barton do acknowledge as "*a literacy*" (p. 385)).

The criticism that the IALS only provides a partial picture of literacy is probably accurate; however, this is not necessarily a limitation. Functional literacy is a necessary fundamental building block to further literacies including critical literacies, workplace literacies, computer literacy, etc. An understanding of the factors that enhance engagement in learning functional literacy skills is necessary to explore, just as it is necessary to explore the socio-cultural factors that impact on the development of multiple literacies. However, while related, these are different foci for a series of different studies.

Hamilton and Barton (2000) also criticise the IALS for treating culture as bias. The NLS perspective holds that functional literacy items cannot be removed from their socio-cultural context which gives them meaning (Hamilton & Barton, 2000). The functional skill of reading and comprehension (for the purposes of answering questions about a text, not necessarily understanding the text), however, does not rely on socio-cultural cues to be executed (although admittedly the task would be made a lot easier if it were meaningful). Hamilton and Barton's

criticism is valid when discussing the use of the IALS to compare the socio-cultural literacy practices of samples across cultures, but in the present study functional literacy skill was used primarily as a descriptor variable of the sample. The prose literacy measure was chosen specifically for its hypothesised relationship to the skills required in adult educational environments (Kirsch, Jungeblut, & Campbell, 1991; OECD, 2000). However, it is acknowledged that functional literacy scores are not necessarily an accurate descriptor of the types of literacy practices important in the educational lives of the participants in this study.

The final criticism that test items do not represent real-life items is also valid if the purpose of the tool is to make socio-cultural comparisons of literacy practices across or within cultures. However, this was not the focus of the present study as outlined above. Hamilton and Barton's (2000) criticism of the use of five levels of the IALS to denote literacy ability as arbitrary is valid. The Test of Applied Literacy Skills (TALS) used in the current study was based on the same structure as the IALS (but was not the same assessment as the IALS is not publicly available). With the TALS, however, the authors do not recommend any cut-off points for designating adequate and inadequate levels of literacy suggesting instead a continuum of task difficulty which allows for an understanding of the types of tasks each participant could be expected to address with an 80% success rate (Kirsch et al., 1991). This continuous scoring approach has been used in the current study.

3.2 COPING WITH LOW LITERACY LEVELS

While many adults with low literacy levels have struggled with the need for literacy skills throughout their lives, they have also developed coping strategies for dealing with this problem. Lytle et al. (1986) have noted that while adults are aware of this struggle, they do tend to have a limited intraindividual repertoire for coping with these difficulties. With the exception of participation in adult literacy programmes (a direct way of approaching the issue), most of the

time variations on avoidance coping strategies are reported by adults with low literacy levels to hide their lack of or low level of particular literacy skills. Ross (1987) reports on students in adult basic education classes who have more strategies for coping without reading than for approaching a reading task. Ross (1987) gives examples of job applications being taken home for others to fill out; avoiding applying for jobs that required a written application; holding jobs that required little reading; while in restaurants, ordering standard items, waiting to be the last to order in the group so options could be heard, or asking the waitress for suggestions were used to cope with being unable to read the menu; and, memory being relied on for doctor's and pharmacist instructions. Some individuals will avoid situations where they know they may have to read or write while others maintain a pretence of being able to read by buying a newspaper and pretending to read it (Lytle et al., 1986). Further strategies include feigning confidence to cover fear or relying on others to do literacy tasks for them (Eberle & Robinson, 1980).

When confronted with reading tasks, generally students with low literacy levels would use the following strategies to determine the meaning of a word: searching the surrounding context for cues including using picture cues where available without an attempt at decoding; word substitution; or, word analysis involving breaking the word down into parts (Ross, 1987). With spelling, Ross (1987) found that students generally attempted to avoid writing altogether with few asking for help. Ross (1987) argues that unless poor readers in learning environments are explicitly taught strategies for approaching reading tasks, they will fall back into avoidance mechanisms. This point seems sensible given that while the individual has joined the course to improve his or her ability to read, write, or spell for example, learned behaviours of many years may be difficult to give up particularly when they may have protected the individual from stigma (both perceived and actual).

Lytle et al. (1986) report that adults in adult literacy programmes frequently report feelings of embarrassment and the wish to hide their literacy needs. It is proposed that this motive

conflict (a need to avoid versus a need to engage) and the inherent threat and stress it results in, must make it difficult for the learner with literacy issues to directly approach their literacy and learning needs. Research supports this proposition. Iddo (2002) claims that negative attitudes and beliefs an individual holds about his or her mathematical competencies can impede the learning of such skills and the ability to cope with math tasks. Eberle and Robinson (1980) claim that the negative views of others and the stigma associated with low literacy is often internalised by the people involved and continues to act on them throughout their lives. Stodolsky (1985) claims that negative self-beliefs can lead to students becoming passive rather than action-oriented learners with regard to maths.

3.3 CHARACTERISTICS OF ADULT LITERACY LEARNERS

3.3.1 Formal education

For the purposes of this review, formal education is defined as attendance at a school, university, polytechnic, or another New Zealand Qualifications Authority (NZQA) approved vocational course. A consistent aspect of the literature on characteristics of adults with low literacy levels is reports of primary and secondary high school as times of threat, stress, and disruption (Berg & Lick, 2001; Eberle & Robinson, 1980; Neubauer & Dusewicz, 1988; Tilley et al., 2007). Berg and Lick (2001) reported that general literacy scores (derived from a summation of measures of reading comprehension, spelling, and structure scores) decreased significantly as reports of “suffering at school” increased (p. 9). Lytle et al. (1986) reported that within their sample of 76 adult students with literacy needs only 10% had completed high school.

Neubauer and Dusewicz (1988) reported data from the Philadelphia Literacy Study with a sample of 607 interviewees across the spectrum of adult literacy levels. The original seven

levels of adult literacy were combined to form three: Low (including individuals who could follow brief written instructions and could identify simple words, phrases, or sentences); Intermediate (including individuals who could search, locate, and organise information in lengthy passages as well as make inferences from those passages); and, High (little to no issue with reading tasks) (Neubauer & Dusewicz, 1988). Those in the low literacy group rated their schooling experiences as fair to poor to a greater extent than either of the other two groups, and they also reported more negative images of themselves as learners (Neubauer & Dusewicz, 1988). Lytle et al. (1986) noted similar results with frequent reports from low literacy individuals about past experiences of failure and feelings of inadequacy. Interestingly, despite these findings, the low literacy group indicated higher aspirations for graduating high school and potentially tertiary study than any other group (85.2% had these educational aspirations) (Neubauer & Dusewicz, 1988).

Eberle and Robinson (1980) describe some of the words used by adults with low literacy levels in recounting school experiences: “real terror”, “hard time with it”, “didn’t want to”, “just got mad” (p. 6). Individuals often reported that teachers found their presence disruptive (Eberle & Robinson, 1980), a finding substantiated by Tilley et al. (2007) where individuals recounted being disruptive in class to avoid tasks involving literacy demands.

With specific regard to Training Opportunities⁶ (TOPS) students in New Zealand, Benseman (2001) notes that when working with students who have experienced more failure than success in learning environments, it can be expected that the skills needed to negotiate such an environment successfully will be generally lacking. It is possible that many TOPS students have negative self-concepts because of past learning experiences and the combination with their current lack of employment (Benseman, 2001). This point is substantiated by Eberle and

⁶ Training Opportunities refers to a government programme that works with unemployed people who are generally over the age of 18 to teach them the skills they need to obtain and maintain employment (Benseman, 2001).

Robinson (1980) who claim that self-image as a learner (in terms of the ability to learn, to gain skills, and to apply those skills appropriately) is generated in school experiences. It is claimed that earlier experiences and feelings of failure, rejection, and inadequacy combine to act on the present adult learning environment (Eberle & Robinson, 1980), even though there may be a strong motive to participate.

3.3.1.1 Employment

In the Philadelphia Literacy Study, those in the low literacy group had lower aspirations for employment (blue-collar professions) than the intermediate and high literacy groups (Neubauer & Dusewicz, 1988). This finding contrasted with the findings of Lytle et al. (1986) who noted that while adults with identified literacy needs were looking for low status, low paying jobs, their general aspirations were for white collar professions. Overall the majority of those with low literacy levels participating in adult education courses were found to be unemployed by Lytle et al. (1986) and Gottesman, Bennett, Nathan, and Kelly (1996). The New Zealand IALS data showed that of those with literacy levels of two or below who were participating in adult education, most were in full time employment (267,000), 65,000 were in part-time employment, and 155,000 were looking for work or unemployed (Culligan et al., 2004). Gottesman et al. (1996) also found that those of low literacy levels held aspirations for enhanced reading proficiency, high school completion, and university attendance.

3.3.2 Health

In the Philadelphia Literacy Study, the low literacy group reported more than twice the number of physical health problems than the high literacy group (Neubauer & Dusewicz, 1988). These health issues included illnesses of a long duration, physical disabilities, vision problems, and hearing issues that were reported to affect the individual's ability to read and write

(Neubauer & Dusewicz, 1988). Sligo, Comrie, Olsson, Culligan, and Tilley (2005) found in a series of interviews with 88 adult literacy course participants that the majority mentioned health issues in the past that had impacted on their participation in childhood education (and continuing health issues that impacted on their ability to participate in educational and employment opportunities in later life). Gottesman et al. (1996) reported that in their sample of 280 adults with reading difficulties, two thirds reported experiencing health problems including developmental delays and substance abuse.

3.3.3 Other

People who have literacy needs are in the words of Eberle and Robinson (1980) “surrounded with assumptions that reduce rather than increase his/her capacity to make choices that could result in changing the situation” (p. 5). Fear as a result of vulnerability and a feeling of lack of control is reported by those that must depend on others to assist them in such tasks (Eberle & Robinson, 1980). Low self-esteem, frustration, and sadness were also discussed by Gottesman et al. (1996) in their review of the characteristics of 280 adults with reading difficulties as understandable reactions to the difficulties of life and participation in education that this group faced. Gottesman et al. (1996) also found that the lower the individual’s reading skill (measured by the Word Identification sub-scale of the Woodcock-Johnson Psycho-Educational Battery-Revised) the more severe the social and academic difficulties that the individual experienced.

In an analysis of the Netherlands IALS data, Schereen (2001) showed that educational background, gender, age, and participation in adult education were significant predictors of literacy level for older adults (over the age of 50). The most important predictor was educational background, a finding substantiated by the analysis of the NZ IALS data for demographic predictors of literacy proficiency where educational level was the only significant predictor of

literacy level (Culligan et al., 2004), a variable that had particularly strong effects on the development of prose literacy (Schereen, 2001). Gender was predictive of document and quantitative literacy, but not of prose literacy level (Schereen, 2001). When the age group was restricted to only those of working age (50-65) and work literacy practices included in the regression model, no effect of age and adult education participation rate on subsequent literacy level was found. Age and participation did not add significant variance to the model after that accounted for by education and work literacy practices.

3.4 PARTICIPATION IN ADULT EDUCATION

Wikelund, Reder, and Hart-Landsberg (1996) open their discussion of participation in adult education with a review of the groups within society most likely to be associated with participation. As opposed to non-participants, these individuals are more likely to have a higher education, be younger, have higher socioeconomic status, are male, and are employed in a skilled occupation (Crowther, 2000; Darkenwald, 1980; Scanlan, 1986). Non-participants in adult education are typically claimed to be those of lower social status, who have lower levels of educational attainment, are older, unemployed, women, and/or are affiliated with ethnic minority groups (Crowther, 2000; Livingstone, 2001).

A study by MacLachlan and Cloonan (2003) investigated the incentives and barriers to participation in adult literacy education. The incentives to participation found were: accessing and retaining employment; improvement in quality of life; developing confidence; the nature of provision; when the programme had a high profile and information was available about it; responsibilities for dependents; for a collective or community benefit; to learn more about using technology; and to keep up with change (MacLachlan & Cloonan, 2003). MacLachlan and Cloonan found that the barriers to participation in adult literacy education included: a lack of confidence in learning ability combined with the fear of exposing this to peers (stigma);

circumstantial factors such as lack of time, poor transport, lack of childcare facilities; the perceived cost of learning; a lack of information on where to go and how to obtain assistance; the nature of provision (perceptions that it would be like school); lack of provision in some areas; family commitments and family pressure; and a sense that education is 'not for us'. Valentine and Darkenwald (1990) outline six factors that deter participation in adult education: lack of confidence; lack of course relevance; time constraints; low personal priority; cost; and, personal problems. McGivney (1993), in her study of women's participation, adds institutional barriers (such as an unresponsive adult education system in terms of teaching and learning strategies, timetabling, admissions to courses, lack of adequate information and publicity) and further dispositional barriers (attitude problems, negative perceptions of learning, low motivation, anxiety, low self esteem, lack of confidence) to the list. MacLachlan and Cloonan state that while some of the barriers or incentives mentioned such as a lack of confidence as a barrier to learning could actually be improved by participation in a course. This does not matter, however, if the potential participants do not perceive that this could be the case (which could link with the perception of previous school experiences where 'education is not for me'). In other words, if participants do not make the link between learning skills and enhancing other aspects of their wider lives in conjunction with this, then they may not make the judgment to participate at all. Further, MacLachlan and Cloonan argue that participation in adult literacy education programmes can only be enhanced by focusing on enhancing learner support and guidance to work on the dispositional barriers to learning.

While, in some cases, lack of participation in adult education could be due to circumstantial, institutional, or dispositional barriers, Crowther (2000) states that non-participation could perhaps be best understood in some cases as an active choice that is informed by prior experiences. It could also be an active choice informed by present status and the belief (or non-belief) in the programme's relevance and worthiness.

Counts of New Zealand adults participating in adult education courses at a range of tertiary institutions show that the majority of adults participating in courses are those with literacy levels on the IALS of three or above (considered to be adequate) (Culligan et al., 2004). Individuals with literacy levels of one or two on the IALS scale are nearly half as likely to be participating in a course as their higher literacy level peers (Culligan et al., 2004).

3.5 PARTICIPATION IN ADULT LITERACY EDUCATION

Adult literacy educators often discuss the need for relevance in their programmes to the student's learning goals (Neilson et al., 2006; Watson et al., 2007; Wlodkowski, 1999). Often a person with literacy needs will find it difficult to learn functional literacy skills and/or multiple literacy competencies unless the lessons are relevant to what they need to learn to achieve their goals (Wlodkowski, 1999) and are presented in a manner that fits with their preferred modes of learning (Ross, 1987; Iddo, 2002). Wlodkowski (1999) in his discussion of adult motivation to learn outlines that adults typically choose vocational and practical education as these courses provide the knowledge and skills necessary for employment. Employment or enhancement of employment is often a goal of those with functional literacy needs (Ross, 1987).

Specific literacy needs were described by MacLachlan and Cloonan (2003), who interviewed participants in adult literacy programmes. Literacy demands in personal life were viewed in terms of an increasing need to understand and manipulate complex written and numerical information, especially the need to keep up with children or grandchildren (MacLachlan & Cloonan, 2003; Ross, 1987). Workplace literacy skills were reported as needed due to an increasing amount of paperwork and technological language (MacLachlan & Cloonan, 2003). Other reasons given for coming to an adult literacy course included learning particular skills, improving interpersonal skills, and improving social acceptance (Lytle et al., 1986).

With regard to the motivations for participation in adult literacy programmes, the list is long and varied. Beder and Valentine (1990) list several possible sources of participant motivation derived from a sample of adult basic education (ABE) students in Iowa: self-improvement, family responsibilities, diversion, developing literacy skills, furthering community/church involvement, job advancement, an economic need, or educational advancement. Lytle (1991) adds a desire for enhanced self-esteem as an implicit motivation to this list. Demetris (1997) goes further to state that the motivations for learning are not always tied up with the material benefits of that learning (for example, scoring a level higher on a standardised test) but can be seen as being associated with the social and psychological needs of the individual, which in turn, influences the construction of their personal and social identities.

Barriers to adult literacy learning were outlined in a study by Frank (1996). Time, money, employer attitudes to training, and distance to the course were barriers perceived by participants, with a particular emphasis on the first two (Frank, 1996). Some participants stated they did not take further courses or participate in courses that their employer did not fund, as they did not feel they could, or were not willing to, override the financial barrier themselves. Time and employment commitments were also barriers to participation found by Neubauer & Dusewicz (1988); however, it was interesting to note that over half of the participants categorised as of low literacy level reported that there was no need for adult literacy assistance so they did not participate.

Eberle and Robinson (1980) emphasise the unique threatening situation of the learning environment for those with literacy issues. These authors claim that this group of people enter such environments without access to information that is freely available to others, or if they do have access to such information it is dependent on the interpretations of others (which may or may not give the individual the resources they need to respond appropriately) (Eberle & Robinson, 1980). As a person's competency level grows, expectations can increase and the

heightened responsibility for confronting and addressing literacy tasks with little to no support from others, can be threatening in itself (Eberle & Robinson, 1980).

Resistance to participation in an adult literacy course can be because some individuals will retreat from the threats inherent (and therefore the perceived risks involved) in addressing literacy tasks (an activity they may have more or less successfully avoided up until the present time) (Eberle & Robinson, 1980; Ross, 1987). Others genuinely believe that there is nothing they can do to change their literacy competencies (Eberle & Robinson, 1980), suggesting an extreme internalisation of previous failure in learning environments. Eberle and Robinson (1980) note that outside of school, previous adult learning experiences can also contribute to a resistance to engage in further education. Some have experienced the same embarrassment or rejection that marred their school days, while others did not receive the level of individual attention they needed to learn effectively (Eberle & Robinson, 1980). With little experiences that show success in learning, the prior learning experiences combined with an initial fear that they are unable to learn can lead to individuals internalising that they really are incapable of learning (Eberle & Robinson, 1980). Tutors have reported that the affective internalisations of “I can’t” and “I’m too dumb” can dominate learning expectations with each failure (no matter how small) being taken as confirmation of these perceptions (Eberle & Robinson, 1980, p. 28). In contrast, learners with confidence in their ability to learn are reported to take small failures in their stride (Eberle & Robinson, 1980). Eberle and Robinson (1980) argue that success from accomplishments needs to be perceived before sufficient confidence can be gained for these individuals to try new literacy tasks.

Hayes (1988) interviewed 160 ABE students, deriving five factors of deterrents to participation in ABE courses: Low self-confidence, social disapproval, situational barriers, negative attitude to classes, and low personal priority. A limitation of this study was that deterrents to participation were derived from a sample of participants in ABE courses, and

therefore may not be an accurate representation of what a sample of ‘non-participants’ might say. (Non-participation is outside the scope of the present study due to the same reason). However, these findings are of interest to the current study as it could be that these five factors impact on the formal education experience of participants themselves, perhaps influencing persistence and the ability to learn.

3.5.1 Persistence

In the Philadelphia Literacy Study, 27.5% of the individuals in the low literacy group began an adult literacy course but less than half (10.5%) completed (Neubauer & Dusewicz, 1988). Individuals in the intermediate group took up the opportunity for adult literacy skill improvement less often (23.1% initially took part), but, as with the low literacy group, under half completed (10%) (Neubauer & Dusewicz, 1988). Harman (1984) reports similar attrition rates of 50% in United States literacy programmes overall.

In general adult learning environments, high levels of stress have been linked to lower academic performance (Hockey, 1979) and can lead to a person leaving the course (Hirsch & Keniston, 1970). A study by Shields (2001) resulted in a contradictory finding where individuals who persisted in their college courses reported significantly more stress than those who did not persist. Shields explains this by stating that persisters were in the course for longer and therefore had more opportunity to feel stress with regard to learning goal attainment. In a further interpretation that Shields touches on, it is possible that persisters viewed their high levels of stress as a challenge, whereas stress for non-persisters was an appraisal of threat. However, this is speculation as the nature of the stress in this study was not examined. In a logistic regression analysis predicting persistence or non-persistence the following results were found: students who persisted had significantly higher active coping scores (assessed as the number of attempts to find assistance) than non-persisters; students who had higher grade point

averages (GPA), had completed more credit hours, and thought it was important to know other students were more likely to be persisters; and, men and those who were not employed were more likely to be persisters (Shields, 2001). Shields provides an interpretation of higher grade scores and higher stress levels in persisters, stating that the stress – GPA relationship may be mediated by active coping strategies. The finding that those not in employment are more likely to persist may reflect Shield's view that traditional young school-leaver students are more likely to persist in study than non-traditional students who are often older adults juggling employment and family lives as well as study.

3.5.2 Confidence

Confidence is seen as a conduit for participating in further education and training, particularly in terms of when confidence is gained from a first positive educational experience (Frank, 1996). When asked about the benefits of taking part in an adult literacy programme, the majority of students in Lytle et al.'s (1986) study reported affective reasons of increased independence, self-esteem, and self-confidence. Benefits of attending adult education reported by Frank's (1996) participants were: enhanced reading, writing, and spelling skills in terms of business letters and note-taking; family literacy benefits; a fuller understanding of the work organisation; increased possibilities of taking part in community activities; and, increased confidence. Long-term benefits included: increased confidence; encouragement to continue on with learning; self-esteem increases; promotion prospects improved as did job-seeking prospects when the company closed or redundancies occurred; more offers of training opportunities; gains in useful skills for work; gains in useful skills for other training programmes; improved participation in meetings; and, a wider range of further training/education was taken up (Frank, 1996). Ross (1987) also reported benefits of increased interest in reading, improved ability to read and fill out forms, and increased self-confidence in a sample of 15 adult basic education students.

Norman and Hyland's (2003) study of confidence in learners found several indicators of low confidence in a learner, as well as several factors that appeared to influence increases in confidence. Low confidence could be influenced by: the newness of the task; an incongruence of identity with the teacher (i.e., does not look like or like the teacher); overestimating of task requirements; self-doubt; own physical characteristics; fear of not being accepted by others; feelings of inferiority and perceived knowledge deficit; negative thinking; feeling scared; feelings of being judged; and an uncertainty of being successful (Norman & Hyland, 2003). The factors judged to influence increasing confidence included: being able to learn, experience and achieve (this included learning and utilising new things, being successful in accomplishing things, being given responsibility, establishing a positive rapport with other learners and receiving feedback from both other learners and tutors, having an open environment where fears and problems could be discussed); realism (accepting that there is no need to know everything); social interaction; familiarity and receiving support and encouragement; relaxation and reassurance; self-management; working with staff; receiving criticism constructively; and being treated well (Norman & Hyland, 2003). Berg and Lick (2001) argue that learning environments need to be socially integrative and facilitate the development of optimism in learners. These authors argue that while learning to read can result in optimism for the future, optimism can also help students learn (Berg & Lick, 2001).

3.5.2.1 Constructions of learner identity

MacLachlan and Cloonan (2003) argue that the social relationships the individual has participated in shape their identity as a learner. MacLachlan and Cloonan found that while for a large number of adult literacy education participants, formal schooling was perceived as a negative experience, it was the continuance of a belief that the person was not capable of being a learner that had held them back from participating. Crowther (2000) claims that if an individual's perceptions of the world are changed, this will have an effect on their perception of

themselves. This approach has similar connotations of cognitive-experiential self theory which claims that world view and self view are both housed within the same experiential system (Epstein, 1992). This could also work in the reverse way, for example, if a person's perception of themselves is changed (i.e., their identity is changed), then their perception of the world (and the opportunities available to them) may change also.

It is argued that learning (like coping) is not purely a reaction to external situations, nor simply a construction of an individual's mind, but an interaction of the two. Bloomer and Hodkinson (2000) outline that changes to dispositions within learning processes, are also changes to personal identity. Transformations through learning is argued to take many forms, influenced not only by the habitus (a concept equivalent to schema) and the contexts within which the habitus has developed, but the contexts within which the person is located while learning (Bloomer & Hodkinson, 2000). Of relevance to the present study, Bloomer and Hodkinson's study of the learning pathways of young people between the ages of 15-19 found that learning pathways are largely linked with other life experiences and by learning that occurs outside of formal education/training settings. They also found that between the ages of 15-19 personal identities were developed and subsequent learning careers were tightly bound to these (this could mean that either participants removed themselves from further education or engaged with further education). Bloomer and Hodkinson's study emphasises that learning is not simply a skill divorced from cultural, social, and individual constructs.

3.6 SUMMARY

The above review has provided an overview of the particular population of interest in this study. The following section outlines the objectives of the present study and the specific hypotheses that have been derived from the joint coping, stress, and adult literacy literature.

3.7 THE PRESENT STUDY

The present study explored whether coping with stress in adult vocational educational environments, at the level of both coping styles and specific strategies, differed by prose literacy score and whether this was related to persistence⁷. This study also investigated whether time in the course impacted on development or change in particular coping approaches, and whether these subsequent coping styles and strategies were associated with post-course goal achievement such as employment and/or further study.

The overarching aim of this study was to provide descriptive characteristics of the broad coping styles and specific coping strategies used differentially by those with low literacy levels versus moderate to high literacy levels in adult learning environments and relate these to outcomes of persistence and post-course goal achievement. It is argued that adult learning environments are high-stress situations for those with low literacy levels given their previous experiences (and associated internalisations) in formal education. The need for adult learning environments to cater to this group in ways that will allow them to reach their full potential is evident and an assumption of this research is that participation in further adult education for those with low literacy skills is something that should be encouraged. While the study design included only those individuals with low literacy (and high literacy) skills who have chosen to take part in an adult vocational course, it is possible that the only key difference between participants and non-participants of low literacy levels is the strength of the goal of qualifications and/or employment versus the strength of the motive to avoid embarrassment, rejection, and perceived stigma (with non-participants holding higher levels of the latter than the former, and vice versa for participants). Hence, it is possible that the findings of this study

⁷ Education in this study and formal learning were defined as per Desjardins (2001): Education is “an environment in which learning can potentially occur in an organized and taught manner”, while formal learning occurs “as a result of attending formal education” with learning being any learning that occurs in or from that environment (p. 226).

(taking the above into account) may assist to develop understandings of non-participation.

Understanding more about the coping styles and strategies predominantly used by those of low literacy levels (as distinguished from those used by individuals with high literacy levels) should also contribute to understanding factors associated with persistence for this group. High attrition rates have been reported in adult literacy education courses (Lytle et al., 1986; Neubauer & Dusewicz, 1988) and it is suggested that a similar attrition rate (if not higher) would be seen in adult vocational courses. Further, in regard to those participants that do persist in the course, research of this nature may allow for an understanding of the types of coping styles and strategies used by literacy level and how these impact on their experience of learning as either threatening or one of challenge. If the former, coping styles and strategies may need to be altered to perhaps allow for a more positive, more challenging, and less threatening learning environment for the student (which would be expected to align with favourable post-course outcomes such as continuing with further education).

The use of coping styles and strategies and their stability or lack of stability over time is difficult to predict. Schwarzer and Schwarzer (1996) note that dispositional approaches to coping with similar stress at two time points should be stable. Krohne (1993) points out that stability does not imply a static entity, claiming that changes can be stable. However, it is also acknowledged that participants were reflecting on different temporal aspects of their lives at the time one and time two interview points, so the different situations may impact on coping response reporting (even though the participants reflected on the same domain). (At time one, participants reflected on a recent prior educational environment as to their usual means of approaching stress, while at time two, participants reflected on their current educational environment). It may be that increasing familiarity of the course and perhaps more understanding of approaches to the coursework and resources available for use may promote changes in coping style and strategy over time.

Changes over time with regard to prose literacy score is also unknown. While practice with literacy tasks has been shown to improve literacy ability over time (OECD, 2000), studies have shown that an average of 100 hours of focused literacy instruction is required before a student can progress an equivalent of a U.S. grade level in any one form of literacy (Comings, Sum, & Uvin, 2000; Darkenwald, 1986; Rose & Wright, 2006). However, these studies refer to literacy levels as opposed to literacy continuum scores.

The exploration of post-course employment and further study outcomes is included to allow for a discussion of influence of particular coping styles and literacy score with regard to post-course achievement. Particular coping styles are often related to positive and negative outcomes, and positive experiences are likely to invoke continuation of similar experiences. Exploration of the attainment of post-course outcomes may provide a picture of the relationship of coping styles to positive, negative, or mixed outcomes for this particular sample.

The assessment tools used in this study were the COPE (Carver et al., 1989), the adaptability subscale of the Emotional Quotient Inventory: Short Version (EQI: S) (Bar-On, 2002), and the prose literacy subscale of the Test of Applied Literacy Skills (TALS) (Kirsch et al., 1991). The COPE was chosen due to its ability to measure both dispositional coping styles and strategies across adult learning situations as opposed to a focus on one particular situation or a hypothetical situation (as used in another dominant coping assessment tool, the Ways of Coping Questionnaire). Dispositional styles and strategies were explored as a basis for understanding the characteristics a person brings to stressful educational stimuli. The situational characteristics that allow or hinder expression of these dispositional tendencies were not explored in-depth.

The EQI: S was chosen due to the adaptability subscale combined with a means to check inconsistency, positive impression, and general mood impacts on participant responses. It was

considered important to include a measure of adaptability given the theoretical distinction between coping and adaptation that forms an assumption of this research. Higher adaptability scores were defined as representing “individuals [who] are flexible, realistic, and successful in managing change. They are adept at finding effective ways of dealing with everyday problems” (Bar-On, 2002, p. 16). This operationalisation is distinct from coping as the COPE instructions asked participants to think about a time of stress when answering, whereas explicit instructions to think about life in general were given before the EQI: S was administered. Participants with high literacy scores may have had more experience with formal learning environments and/or ways to cope with stress in educational situations. This may translate into higher levels of flexibility in managing change; therefore, it is proposed that those with higher levels of literacy are more likely to have higher scores on the adaptability scale.

Finally, the prose scale of the TALS was chosen given its relevance to adult education participants in particular as a more fundamental and general form of reading skill than document literacy which is focused on particular aspects of documents such as reading train schedules (OECD, 2000).

3.7.1 Research questions and hypotheses

Following on from the previous literature reviews, a series of research questions and hypotheses were developed. The literature reviews led to the consideration that individuals with higher prose literacy scores could be expected to have past experiences of formal education that were generally positive. Following on from this it was speculated that this group would therefore show more confidence in their ability to meet the requirements of the course and therefore may not be as threatened by educational tasks as those with lower literacy levels may be. Due to their proposed heightened confidence and successful practice with similar environments and tasks in the past, higher prose literacy scores were hypothesised to be

associated with higher use of problem-focused strategies in times of educational stress and with persistence in the course. Higher adaptability scores were also proposed to be associated with higher prose literacy scores and persistence given similar reasoning that individuals with higher literacy scores would have the confidence to be more flexible and adaptable in their approach overall. Lower prose literacy scores were hypothesised to be associated with higher use of emotion-focused strategies, particularly avoidance strategies given the literature linking low literacy with the use of avoidance strategies in educational environments. Because of the link with avoidance strategies, low prose literacy scores were also expected to be associated with non-persistence in the course. The specific research questions and hypotheses are outlined below:

1. Can coping style, adaptability, or prose literacy score predict persistence in the course?

Hypothesis one: Participants who persist in the course will have higher problem-focused coping scores on average than those that do not persist.

Hypothesis two: Participants who persist in the course will have lower emotion-focused coping scores on average than those that do not persist.

Hypothesis three: Participants who persist in the course will have higher adaptability scores on average than those that do not persist.

Hypothesis four: Participants who persist in the course will have higher prose literacy scores on average than those that do not persist.

2. Does coping style explain a significant amount of variance in prose literacy score?

Hypothesis five: Increases in problem-focused coping score will be significantly associated with increases in prose literacy score.

Hypothesis six: Increases in emotion-focused coping score will be significantly associated with decreases in prose literacy score.

3. Does adaptability explain a significant amount of variance (over and above coping style) in prose literacy score?

Hypothesis seven: Increases in adaptability score will be significantly associated with increases in prose literacy score.

Hypothesis eight: Adaptability will explain a significant amount of variance in prose literacy score once the effect of both coping styles is taken into account.

As mentioned under ‘The Present Study’ whether coping styles, adaptation, or prose literacy score would change over time was unpredictable given the conflicting literature on the topic. Therefore, no hypotheses were generated but an open-ended research question was developed:

4. Do coping styles, adaptational strategies, or prose literacy scores change over time?

As participants with higher prose literacy scores were overall expected to show higher levels of adaptability and problem-focused coping, as well as persistence in the course, it therefore followed that this group would be the most likely (given the above being accurate) to achieve their post-course employment and study goals. Further, Culligan et al. (2004) have found that those of higher literacy levels tend to participate more in adult education opportunities (both formal and informal), providing additional support for the premise that individuals with higher prose literacy scores would be more likely to achieve their post-course study goals than those of lower literacy scores. The characteristics of higher problem-focused coping, lower emotion-focused coping, and higher adaptability associated with higher prose literacy score are also proposed to be associated with achievement of post-course goals. The research question for this aspect of the study and the associated hypotheses are:

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5. Are coping styles, prose literacy score, and/or adaptational responses associated with achievement of post-course goals?

Hypothesis nine: High problem-focused coping scores at time two will be associated with post-course goal achievement at six months while low problem-focused coping scores will be associated with non-achievement.

Hypothesis ten: High emotion-focused coping scores at time two will be associated with non-achievement of post-course goals at six months while low emotion-focused coping scores will be associated with achievement.

Hypothesis eleven: High adaptability scores at time two will be associated with post-course goal achievement at six months while low adaptability scores will be associated with non-achievement.

Hypothesis twelve: High prose literacy levels at time two will be associated with post-course goal achievement at six months while low prose literacy levels will be associated with non-achievement.

CHAPTER FOUR - METHOD

4.1 SAMPLE

4.1.1 Criteria for inclusion

There were four key criteria for inclusion in the study sample. First, participants needed to be between the ages of 16 and 65 years. This age range was considered to be working-age and was measured in this manner as employment outcomes post-course (or when the participant chose to leave the course) were to be investigated. Statistics New Zealand, in their quarterly Household Labour Force Survey, define working-age as the “usually resident non-institutionalised civilian population of New Zealand aged 15 years and over” (Statistics New Zealand, 2004, para. 19). New Zealand (NZ) does not have a mandatory retirement age, therefore, residents may choose to continue to work past the age of 65 (Statistics New Zealand, 2004). However, those over 65 who are not working are eligible to receive NZ Superannuation (Work and Income, 2008).

In comparison, the International Adult Literacy Survey (IALS) undertaken in New Zealand and 21 other countries in 1996, defined working-age in New Zealand as between the ages of 16 and 65 years (OECD, 2000). Only six countries in this sample defined working-age differently, three using 16+, one using 15-65, one using 15-74, and a final one using 16-74 (OECD, 2000). A subsequent Adult Literacy and Life Skills Survey (ALLS) undertaken in NZ in 2006 also used the 16-65 working-age range (Ministry of Education, 2008).

The IALS and ALLS definition of a working-age NZ adult was used in this study, to allow for appropriate comparisons of the literacy assessment data with the IALS and ALLS findings.

A second criterion for inclusion was that participants needed to self-report a goal to obtain employment, enhance employability, or undertake further study post-course. This was a necessary criterion as movement toward self-reported goals was to be assessed.

Third, to ensure that literacy level in English could be appropriately measured only those participants who had spoken English from birth were included. This criterion included those who had spoken English from birth along with another language. Four participants in the sample fitted this latter category. This criterion was introduced because of the known difficulty associated with separating literacy difficulties from language difficulties (OECD, 2000).

Fourth, participants needed to be enrolled in an adult vocational course. Originally, participants were proposed to be drawn from adult literacy training courses, specifically those courses that provided specialist literacy services and those that provided integrated literacy within vocational courses. However, an earlier study illustrated the difficulties inherent in such a design as well as the lack of set start and end dates to literacy assistance programmes in specialist literacy provider agencies (see Neilson & Culligan, 2005, for a discussion of the difficulties inherent in identifying adult literacy providers in one NZ city). Definite start and end dates of the course were necessary to ensure a way of measuring persistence. Further, the constitution of integrated literacy within integrated literacy courses varied. Neither nationally nor locally is there a set curriculum to ensure that literacy is integrated in consistent ways across providers (Sligo et al., 2007; Watson et al., 2007). Where participants (three of the entire sample) volunteered to take part from one adult vocational course that also had no set end-date, the proposed end-date stated by the participant and tutor was taken as the actual end-date with persistence measured based on their continued attendance on or past this date.

Thus, due to the ambiguity of end-dates for adult literacy specialist providers, the finding that most adult literacy providers in Wanganui at least were vocational adult training

programmes with integrated literacy, and the aim of the research to explore vocational outcomes, the decision to focus the participant sample within adult vocational courses was taken.

4.1.2 Sampling frame

In an attempt to ensure participation of adults with low prose literacy levels within the overall sample, vocational adult providers identified as likely to have learners from a range of literacy levels were targeted. Organisations believed to fit this definition were Private Training Establishments (PTEs), Foundation Learning Centres within Universities and Polytechnics, and, in particular, Certificate and Diploma courses within the PTEs and Polytechnics. These organisations served as a beginning point for building a sampling frame, from which others were contacted through snowballing techniques.

Of those organisations that chose to take part, two were polytechnics, four were PTEs, two were foundation learning centres of universities, and one was an Industry Training Organisation (ITO). Participants in Polytechnics A & B came from Certificate-level courses in Tertiary Study Skills, Business courses, Hairdressing, Art courses, Training Opportunities (TOPS) Computers in Business, Chef training, and Health Science and Technology. These courses ranged from NZQA level two to NZQA level four. The TOPS course is a NZQA-accredited programme funded by the Tertiary Education Commission (TEC) for job seekers over the age of 18 who usually have low qualifications amongst other criteria (TEC, 2007). Eighteen participants were sourced from Polytechnic A and five from Polytechnic B.

Participants at three of the four PTEs were involved in Certificate courses at NZQA levels three and four. These courses included Support of the Older Person and Youth Worker. One PTE provided training resulting in a Certificate of Employment Skills, considered a preparatory

course for the Level One National Certificate of Employment Skills. Twenty-five volunteers were sourced from these three PTEs.

Participants at the fourth PTE were involved in specialist one-to-one literacy training, based on the individual needs of the participant. Of the three sourced from this provider, all were currently employed but were undertaking literacy training to improve their current work.

Participants were also sourced from two university foundation learning programmes, specifically the Certificate in Foundation Studies, a pre-degree qualification which when completed is equivalent to New Zealand university entrance (NZQA Level Three). Two participants from these courses chose to take part in the study.

A final provider of participants was a local ITO. Participants within this provider were sourced from a National Certificate programme at Level Four on the NZQA scale. Three participants chose to take part in the study.

In most instances the tutor of the class presented the key points of the study and handed out information sheets (see Appendix A) to beginning classes near the beginning of each course semester. In some cases, students were contacted before their courses began (at Polytechnic A only) as part of an existing process of prior contact with students at the Polytechnic.

As the first two interviews needed to be conducted face-to-face, providers and participants were mainly sourced from the lower North Island region where the researcher is based.

4.1.3 Final sample

Recruitment processes for the self-selected sample continued at several different adult

vocational training providers from July 2006 until September 2007. Seventy-five students initially expressed interest. However, 19 were unable to participate or were unable to be contacted. The final sample consisted of 56 participants. Fifty participants were chosen as the minimum number acceptable for this study's proposed multiple regression analysis, as at least 5 to 10 cases per variable are needed for this type of analysis (Pallant, 2007; Tabachnick & Fidell, 2007).

4.2 TOOLS

4.2.1 Demographic information

The demographic questionnaire is presented in Appendix B. Information was sought on participant's gender, age group, ethnic group (where the respondent could choose more than one answer), current employment status, level of education reached (including whether the participant finished the year in which they left formal schooling), first language, any health issues, and iwi⁸ affiliation. This demographic questionnaire was modelled on that used in the Literacy and Employment study (see <http://literacy.massey.ac.nz>). This questionnaire was presented orally.

4.2.2 Coping

The dispositional version of the COPE questionnaire (Carver et al., 1989) was used. Participants were asked to think in terms of stressful events arising from within the course itself when responding to the items. In the case of the first assessment, participants were just beginning the course, therefore, they were asked to reflect on their most recent prior course.

⁸ 'Iwi' is a Maori term generally translated as 'tribe'.

This focus was necessary as a means to limit the reported domain of stressful experience. All 15 subscales were used and were each represented by four items, which are ranked by the participant on a four-point Likert scale, anchored “I usually don’t do this at all”; “I usually do this a little bit”; “I usually do this a medium amount”; and “I usually do this a lot”. Respondents answered the COPE items based on the instructions outlined in Appendix C. The instructions were presented orally to the participant, who responded by circling the number representing the category they chose, on a piece of paper given to them.

Carver et al. (1989) report evidence of internal reliability, test-retest reliability, and both convergent and discriminant validity of the COPE inventory. Cronbach alpha reliability coefficients regarding the internal consistency of the COPE scales found a moderate-high correlation for all (all above .6), with the exception of the mental disengagement scale (at .45) (Carver et al., 1989). This latter finding is explained by Carver et al. (1989) as expected as this scale is a “multiple-act criterion” (p. 271).

Test-retest reliabilities determined through two studies, the first of 89 students, the second of 116 students, showed that the test-retest reliability was relatively stable over an interval of six to eight weeks (Carver et al., 1989). All test-retest reliabilities for both samples were correlations over .5, with three exceptions of .46 for suppression of competing activities, .48 for positive reinterpretation and growth, and .42 for behavioural disengagement. Correlations below .5 were only seen in one sample however (Carver et al., 1989).

Finally, a comparison of the COPE items with personality traits showed that those coping strategies believed to be “functional” were correlated positively with personality dispositions believed to be “beneficial” (Carver et al., 1989, p. 276). While these correlations were not strong (ranging from $r = .08$ to $r = .32$), they show evidence for convergent validity. The lack of a strong correlation is also evidence for discriminant validity, showing the COPE is not a

measure of personality traits (Carver et al., 1989).

4.2.3 Emotional Intelligence

The BarOn Emotional Quotient Inventory – Short Version (EQ-I: S) is the most widely used measure of emotional intelligence and was used in the present study primarily to assess adaptability. Bar-On (2002) defines emotional intelligence as “the emotional, personal, and social dimensions of general intelligence. Emotional intelligence involves abilities, competencies, and skills related to understanding oneself and others, relating to peers and family members, and adapting to changing environmental situations and demands” (p. 1). The short version was deemed applicable in the present study to ensure that time taken filling out questionnaires, and therefore participant fatigue, was kept to a minimum.

The EQ-I: S has been developed for use with samples who are 16 years and older. The administration time of the tool was approximately 15 minutes, and consisted of a five-point Likert scale format. The five points on this scale were represented by the following statements: “Very seldom or not true of me”; “Seldom true of me”; “Sometimes true of me”; “Often true of me”; and, “Very often true of me”. The instructions (see Appendix D) were presented orally to the participant, who responded by circling the number representing the category they chose, on a piece of paper given to them.

While the EQ-I: S can provide an overall measure of emotional intelligence, it comprises validated subscales including a measurement of intrapersonal ability, interpersonal ability, stress management, adaptability, general mood, and two further scales that measure whether a participant was attempting to give a positive impression through their answers, and whether the participant was answering the items in an inconsistent way.

Cronbach's alpha coefficients for each scale of the EQ-I: S showed moderate-high internal reliability coefficients, ranging from .76 to .93, with the exception of the Positive Impression scale, which ranged from .51-.76 across the four age groups of the development sample (Bar-On, 2002). Test-retest reliabilities were also calculated and ranged from .46 to .80 following a test-retest of six months duration in a sample of 352 adults (Bar-On, 2002).

Bar-On (2002) discusses a range of scales including the BarOn EQ-I, the Trait Meta-Mood Scale (TMMS), and the construct of Alexithymia (the ability to identify, process, regulate, and express emotions) in support of construct validity with sub-scales of the EQ-I: S. Overlapping scales on the EQ-I and EQ-I: S are highly correlated, ranging from .73 to .97, correlations between the TMMS and the EQ-I: S have been reported as between .58 and .63 in different samples, while all correlations between the subscales and the Toronto Alexithymia Scale ranged from .38-.71 (Bar-On, 2002).

Further, two studies reported by Bar-On (2002) show that the EQ-I: S cannot be classified as a personality measurement as it shows low to moderate correlations with measurements of personality such as the NEO-Five Factor Inventory. Of interest to this study, moderate positive correlations have been found between the Task-Oriented coping scale of the Coping Inventory for Stressful Situations (Endler & Parker, 1990), and the EQ-I: S scales and low negative correlations were found between the Emotion-Oriented coping scale and the EQ-I: S scales (Bar-On, 2002). This leads Bar-On (2002) to suggest that an "emotion-oriented coping style has been linked with non-adaptive outcomes, while a task-oriented coping style has been linked with more positive outcomes" (p. 48).

In terms of predictive validity, Bar-On (2002) also cites evidence of the EQ-I: S as a capable and accurate measure of occupational performance and academic success.

4.2.4 Literacy Skills

The Tests of Applied Literacy Skills (TALS) were used to assess prose literacy. While it would have been potentially beneficial to assess each literacy domain, the time involved in assessing each domain was untenable. To accurately assess prose literacy, the TALS assessment took 45 minutes to administer (20 minutes for each of the two sections of the assessment, and a further five minutes approximately for the practice questions and instructions) (see Appendix E for the instructions).

The prose TALS was administered in paper and pencil format. A benefit of the prose TALS was its parallel forms allowing for parallel versions of the same literacy assessment to be administered with the same participant at two different time points.

Literacy scores could fall along a continuum from 0-500; however, the prose literacy assessments are believed to include tasks that range in difficulty from 230-476. While a single score was derived at each time point for each participant, the standard error (SE) of that score indicated the range that the true score could be expected to fall within. For example, a score of 200 with a SE of 30 actually meant that the true literacy score could fall between 170 and 230 (the SE set the range).

4.2.5 Semi-structured qualitative interviews

The qualitative interviews included information collected on instances of situational stress from outside the educational environment for a larger analysis of which this thesis forms one part. The qualitative information is not used in this report due to the current study's focus on the domain of educational stress only. Therefore, these qualitative aspects of the interviews will not be described in detail here with the exception of those aspects necessary to understand the

procedure.

The assessment tools outlined above were presented to the participants as a part of a semi-structured interview at each time point (near or at the beginning and end of the course). The first qualitative interview at the beginning of the course differed from the interview given at the end or near the end of the course. Both qualitative interview schedules were developed in two parts (the interview schedule for the first interview can be found in Appendix F, the interview schedule for the second interview can be found in Appendix G).

Due to potential participant fatigue it was considered necessary to keep the first and second interview processes as short as possible. Initially a limit of one and a half hours per first and second interview was established, but this varied dependent on the participant.

4.2.6 Structured telephone interviews

These interviews were undertaken at three months and again at six months post-course (for the schedule of these interviews see Appendix H). The primary purpose of these interviews was to determine movement toward or achievement of goals (including employment, further training, and other personal goals) that participant's had mentioned in their second interview. Telephone interviews were chosen to minimise the amount of time and preparation participants had to commit to the project, and to increase the probability that the majority of participants could be followed-up.

4.3 PROCEDURE

The interviewer for all the first, second, third, and fourth interviews was the researcher. An ethics application was lodged with the Massey University Human Ethics Committee (MUHEC)

in early 2006. This ethics application covered the procedure of the proposed project (outlined below), the proposed sample, and the proposed providers from which the sample would be drawn. Through this process, an Information Sheet (see Appendix A) for participants, an Access Agreement for providers, a Consent Form for participants, and an Authority for Release of Tape Transcripts were developed for use throughout the project. As a further ethical requirement, the same ethics application was lodged with the polytechnic ethics and research committee, who gave their approval for the research to be carried out with polytechnic students and staff who volunteered to participate (MUHEC Approval Number PN:HEC 05/115).

The data collection phase involved four discussions with each participant, the first at or near the beginning of the vocational course, the second at or near the end of the course or when the participant left the course, the third three months after the second interview, and the final discussion three months after the third interview. This four-step longitudinal design was chosen to explore any changes in coping style, adaptation levels, and literacy levels over time spent in a vocational course, as well as the relationship of these variables with the longitudinal outcomes of employment and further training once outside of the course.

First and second interviews were primarily arranged to take place at the training provider agency in a private room. This arrangement was to ensure that the participant felt as comfortable as possible in a familiar environment. The majority of interviews took place in these environments. On occasion, when a participant was unable to attend at the provider agency, interviews were conducted at the participant's choice of venue, including their home, a community agency, or, in one instance, a local café.

Upon meeting for the first time, the participant was given a short introduction to what would be covered in the interview, and also given an assurance that anything they said in the interview would be kept confidential. Participants were then asked to sign a consent form.

The demographics questionnaire was then completed by the interviewer with the questions asked orally of the participant. Following this, the tape recorder was switched on (if consent had been obtained), and the first section of the first interview schedule completed. The tape recorder was then stopped and the COPE assessment administered.

As the participants were possibly of low literacy levels, it was considered necessary to ensure that reading levels did not impact on the ability to understand the Likert scale items. Therefore, the COPE Likert scale items were transferred onto A5 pieces of paper, with one item per piece. Each item was numbered and centred on the page, in large 26 point Times New Roman font. The participant was given an A4 piece of paper with the Likert scale categories in words and numbers from 1 – 4 across the top and the numbers of each statement down the left hand side (please see Appendix C for examples of the A5 scale items, the full questionnaire, and the response sheet). The response sheet was given to the participants and the instructions read to them. The interviewer then put each of the items down one at a time in front of the interviewee, and read each one to the participant. The participant then marked on their response sheet which of the four categories best described what they usually did when they felt stressed when in the course or undertaking coursework. The speed at which each item was put down in front of the participant depended on the interviewee themselves. They maintained a speed they were comfortable with by signalling to the interviewer when to move on to the next item. Some participants asked the interviewer for clarification of words in the items or meaning of the statements on occasion. When this occurred, the interviewer made a note of the responses given to ensure consistency across interviews should the same question be asked by another respondent in a later interview.

Following the completion of the COPE assessment, the tape recorder was turned back on and participants were asked the second section of questions in the first interview schedule. After this section of the interview, the tape recorder was turned off for a final time and the EQ-I:

S assessment was introduced. The format of this assessment was similar to that used with the COPE for the reason of counteracting the potential of reading difficulties. The EQ-I: S Likert scale items were presented one at a time on A5 pieces of paper, with the same process followed, with the exception that the EQ-I: S response sheet had five response categories instead of four (please see Appendix D for examples of the A5 scale items, and the response sheet participants were handed. The full scale is not given here as it is not available for public view. The participant marked their response sheet against one of the five categories that best described them in terms of their general life (not just the course). This point was emphasised so as to ensure the interviewee was not referring to the prior set of instructions (given with the COPE) for this questionnaire.

The final part of the first interview was the literacy assessment. This assessment was kept to the end of the interview process due to the sensitivity required when discussing literacy or the ability to do reading activities with those who may be of low literacy levels. One of the reasons that adult literacy providers give for not using formal literacy tests is the need to ensure that those coming to such courses are not put off by the thought that adult learning will be the same as school learning (Neilson & Culligan, 2005). It was therefore thought necessary to leave the literacy assessment to the end of the interview so that participants were feeling as comfortable as possible with the interviewer. It is possible that fatigue may have impacted the scores of this final assessment; however, if so, it would have had the same effect consistently for all participants. Participants were told that they would be undertaking some reading activities. The word 'literacy' was not used, due to the negative connotations associated with this word by the majority of the wider population (Tilley et al., 2007).

Participants were timed by the interviewer for twenty minutes for the first section, and if they were still working on this section, were then asked to move directly on to the second section. Participants were completing the assessment in front of the interviewer and therefore

observations were made to ensure that participants did not turn back to section one when working on section two (or vice versa).

After the prose literacy assessment was completed, the participant was thanked for taking part, and offered either a \$10 petrol voucher or a movie ticket as reimbursement for their time (approved by both ethics committees).

Following each first interview, participants continued in their courses until such point as they chose to leave the course early or the course itself ended. Participants were asked to contact the researcher if they chose to leave the course early for any reason. The researcher also followed up by telephone every three months with each participant to determine their status as course attendees or not. When a participant was found to have left the course or the course was nearing its end, they were contacted again for a second interview. It was determined that participants would be contacted in the final fortnight of their course to allow an opportunity for them to meet at their training provider's premises, possibly within or just after class time, therefore making arriving for the interview as convenient for them as possible, and the environment as familiar, and hopefully therefore as comfortable, as possible.

The second interview followed the same process as outlined above for the first interview, with one exception. The beginning of the meeting incorporated a semi-structured interview discussing aspects of the course the participant was finishing or had just finished. The discussion centred around several issues: what the participant liked and disliked about the course; their expectations of the course; whether they believed these expectations were met and why or why not; if at any point they thought they might leave the course or not complete the course; and, their goals for the future particularly in terms of employment, further training, and personal or life goals. These goal questions were specifically framed in terms of a participants' goals within the space of the next three months, and their goals within the space of the next six

months from the date of the interview.

Following this initial discussion, the COPE assessment tool was administered, and the same process as for the first interview was followed, including administration of the EQ-I: S. A parallel form of the TALS was administered in the second interview. The second interview took between one and a half to two and a half hours dependent on the verbosity of the participant. Participants were also offered their choice of a \$10 petrol voucher or a movie ticket at the end of the interview.

Participants were contacted by telephone three months from the date of their second interview (and again three months after the first telephone interview) to determine their movement toward or achievement of the goals they had stated in their prior interview. Participants did not receive a voucher for their participation in the telephone interview. Telephone interviews ranged in length from five to ten minutes each.

Participants were thanked for taking part in the research and summaries of either or both general and individual results were sent to those who had requested them.

CHAPTER FIVE - RESULTS

5.1 ANALYSES

The statistical software Statistical Package for the Social Sciences (SPSS) Version 16 (SPSS Inc., 2007) was used to conduct all the analyses. SPSS was instructed to exclude cases from analyses only when data required for that specific analysis was missing (Pallant, 2007).

The findings are presented in five parts. The first outlines data screening procedures and the demographics of the sample. The second explores the issue of persistence in this sample, providing some indicative findings on the relationship between persistence and literacy score⁹, coping strategies, adaptability, demographic, and time factors.

The third section investigates the relationship of literacy score to coping styles and adaptability, while the fourth explores the changes over time between coping strategies, adaptability scores, and literacy score. Finally, the fifth section outlines the relationship between coping styles, adaptability, and literacy score with goal achievement at six months post-course.

5.2 DATA SCREENING

The entire dataset was checked for errors and patterns of missing data before analyses began.

⁹ Mention of literacy throughout this chapter is with reference to prose literacy only.

5.2.1 Validity of the EQI: S adaptability subscale

The EQI: S Technical Manual advocates checking the validity of the tool before interpreting the subscale scores (Bar-On, 2002). Validity of the adaptability subscale score was checked through inspection of EQI: S subscales including the mood index (to determine the general mood of the interviewee) at each time point, the inconsistency index (to determine random response patterns), and the positive impression index (to determine interviewees who responded in extremely positive or negative ways to items). The time one data for one participant was removed due to a high inconsistency score combined with an atypical adaptability score, suggesting bias in the time one information¹⁰. No further issues were found. Details on the validity assessment of the EQI: S are provided in Appendix I.

5.2.2 Data reduction of the COPE tool

Lazarus and Folkman (1984) proposed two main forms of coping: problem-focused coping and emotion-focused coping. Problem-focused coping was defined as approaching stressful situations with problem-focused approaches; that is, doing something to manage, alter, or change the stressful stimulus (Carver et al., 1989; Lazarus & Folkman, 1984). Emotion-focused coping was defined as those behaviours or internal thoughts that can result in an emotional or behavioural disengagement from the stressful

¹⁰ A later multiple regression analysis with the time two data showed one case (one of the same participants as above) was unduly influencing the model (with inflated scores on Cooks Distance (1.60), Standardised Residuals (2.24), and the DFBeta (constant) (1.46)). Subsequent review of the interview notes revealed the participant was pressured for time, completed the questionnaires quickly, and was distracted by his phone ringing on a number of occasions. Further examination of this case showed an inconsistency score of 11 (nearing the cut-off point of 12 indicating a potential random response pattern), and an atypically low adaptability score of 33 (when scores of 70 and below are considered atypical), a reduction of 35 points from the time one measure. For these reasons, this participant's data at time two was considered to be flawed and unduly influencing the model; therefore, this case was removed from all analyses. All figures are calculated without this case.

stimulus, thereby reducing the emotional distress associated with the stressful episode (Carver et al., 1989; Lazarus & Folkman, 1984). It was proposed to develop a similar two-factor structure for the COPE from the current sample. Carver (n.d.) advocates the development of factors from the COPE specific to each research sample, rather than following a set format of creating factors (with regards to developing second-order factors from the original subscales). Carver (n.d.) also notes there is no set manner in which to combine the original subscales to result in a score for problem-focused or emotion-focused coping.

A series of reliability analyses were conducted to explore the structure of the COPE with the current sample. This approach has been used in other studies where the traditional reduction of the COPE to factors involves either a second-order factor analysis on the subscales, or reliability analyses of derived groups of subscales (Carver et al., 1993; Eisengart et al., 2006; Gudjonsson & Sigurdsson, 2003; Kling, Seltzer, & Ryff, 1996; Montes-Berges & Augusto, 2007; Nakamura & Orth, 2005; Sweet et al., 1999; Zautra, Sheets, & Sandler, 1996; Zeidner & Hammer, 1992; Zuckerman & Gagne, 2003). An exploratory factor analysis was not conducted due to the small sample size. No items needed to be rescored due to negatively worded items.

5.2.2.1 Overall reliability of the COPE

The overall COPE scale for the time one measurement point returned a Cronbach alpha coefficient of .86 based on items only. At the time two measurement point, the COPE scale returned a Cronbach alpha coefficient of .91. While some items showed a low correlation with the overall scale at both time points, removal of any of these items did not improve the Cronbach alpha coefficient so all items were retained. Other research using the COPE scale has generally not reported the internal consistency of the

full scale or subscale factors. Even if this information was widely available, the comparability between studies would be difficult as there is little consistency in the use of this tool.

5.2.2.2 Reliability of the COPE subscales

Subscales were calculated as proposed by Carver et al. (1989) and Carver (n.d.), resulting in 15 subscales derived from the addition of the four item scores. The Cronbach alpha coefficient for all the 15 subscales together at time one was .68 and at time two was .78. The statistics indicated that removal of ‘humour’ and ‘substance use’ from both time one and two COPE measures would improve the overall alpha coefficient, but the improvement was marginal.

Further reliability analyses were conducted on the items for each subscale to determine whether each subscale was internally consistent for this particular sample. Table 1 presents the Cronbach alpha coefficients for each group of subscale items at time one and time two. All subscales resulted in Cronbach alpha coefficients of over .7 for at least one of the time variables with the exception of ‘Acceptance’ and ‘Mental Disengagement’. ‘Acceptance’ was found to have lower than .7 internal consistency ratings (.61-.65) across three samples of college students in the Carver et al. (1989) study, and this pattern is replicated here although to a lesser degree. ‘Mental Disengagement’ has been found in other studies including the original exploration by Carver et al. (1989) to have a low internal consistency (Zeidner & Hammer, 1992). This is proposed to be due to it being a “multiple-act criterion” (Carver et al., 1989, p. 269). In other words, the ‘mental disengagement’ subscale is made up of items that encompass an entire spectrum of possible behaviours rather than a unitary behaviour (Carver et al., 1989). While low internal consistency values are not unexpected, the Cronbach alpha

coefficient seen here is lower than the original development study (Carver et al., 1989). Further inspection of the ‘mental disengagement’ items showed one item was negatively correlated with the other three. Removal of this item and recalculation of the Cronbach alpha coefficient still resulted in a low internal consistency; therefore, this subscale was removed from further analyses.

Table 1
Cronbach alpha coefficients for the COPE subscales at time one and time two

| COPE subscale | Cronbach alpha coefficient at time one | Cronbach alpha coefficient at time two |
|--|--|--|
| Positive reinterpretation | .75 | .72 |
| Denial | .77 | .75 |
| Religious coping | .95 | .94 |
| Use of emotional social support | .85 | .90 |
| Acceptance | .52 | .57 |
| Use of instrumental social support | .76 | .75 |
| Active coping | .62 | .70 |
| Restraint | .60 | .74 |
| Suppression of competing activities | .68 | .47 |
| Planning | .69 | .74 |
| Mental disengagement | .02 | .26 |
| Behavioural disengagement | .77 | .76 |
| Focus on and venting of emotions | .83 | .76 |
| Humour | .87 | .87 |
| Substance use | .97 | .99 |

All subscales and items (apart from ‘mental disengagement’) were kept for the following analysis to maximise comparison purposes among other studies.

5.2.2.3 Problem-focused and emotion-focused factors

Two coping style factors were aimed for unlike some of the three factor solutions (including problem-focused, emotion-focused, and avoidance-focused concepts) in the

literature (see Carver et al., 1989), as the two-factor model is the most widely used. Further, the removal of the ‘mental disengagement’ subscale removes an otherwise integral part of the potential ‘avoidance-focused coping’ factor.

Carver et al. (1989) indicated a number of the subscales that they believed fit into problem-focused and emotion-focused coping factors. Suggested subscales that measured aspects of problem-focused coping were: ‘active coping’, ‘planning’, ‘suppression of competing activities’, ‘restraint’, and ‘seeking of instrumental social support’. Those suggested to measure emotion-focused coping were: ‘seeking of emotional social support’, ‘positive reinterpretation’, ‘acceptance’, ‘denial’, and ‘religious coping’. Carver et al. (1989) did not suggest factor allocations for ‘focus on and venting of emotions’, ‘behavioural disengagement’, or ‘mental disengagement’, but did comment that the seeking of instrumental or emotional social support could straddle both factors. With regard to these two subscales specifically, it is acknowledged that in some instances the seeking of emotional social support could be a problem-focused coping response, while the seeking of instrumental social support is not necessarily due to problem-focused actions but could be used as a means to disengage oneself from dealing directly with the stressful stimulus (Carver et al., 1989).

The aim of the data reduction was to generate two groups of subscales that reflected current theoretical understandings and ideally were correlated positively together and negatively with the subscales in the other grouping. An additional aim of the data reduction was to retain as many subscales as possible for comparability purposes with other studies. Each group of subscales needed to return a Cronbach alpha coefficient of at least .6 (ideally .7 or .8) to be considered internally consistent, except for where the mean inter-item correlation statistic was more relevant to report (DeVellis, 2003; Field, 2005; Pallant, 2007).

5.2.2.4 COPE subscale correlations at time one

The factors as suggested by Carver et al. (1989) were explored first to determine internal consistency. While the five problem-focused strategies returned a Cronbach alpha coefficient of .73, the internal consistency of the emotion-focused grouping was .48, with a mean inter-item correlation value of .15. Pallant (2007) recommends that in instances of scales with less than 10 items (such as this second group where $n = 5$), lower than ideal Cronbach alpha coefficients can result. In this instance, the mean inter-item correlation may be more appropriate to report (Pallant, 2007). An ideal range for this value is between .2 and .4 (Briggs & Cheek, 1986). A further emotion-focused grouping including the above and behavioural disengagement, focus on and venting of emotions, substance use, and humour returned a Cronbach alpha coefficient of .26 and a mean inter-item correlation of .08. This factor structure for this sample was not internally consistent.

However, using this theoretical structure as a guide, the inter-item correlation matrix for the time one data was inspected for positive and negative correlations for each of the 15 subscales with each other (see Table 2 for the inter-scale correlation matrix)¹¹. Cohen (1988) suggested the following guidelines for determining the strength of the correlation between variables: $r = .10$ to $.29$ is a small correlation; $r = .30$ to $.49$ is a medium correlation; $r = .50$ to 1.0 is a large correlation. For this analysis, those correlations in the matrix that were equal to or above $.295$ were rounded to $.30$ (a moderate correlation) while those equal to or below $.294$ were considered to belong in the small correlation category.

¹¹ For the same analysis applied to the time two data, please see Appendix J.

Table 2
Inter-scale correlation matrix for the COPE subscales at time one

| | Positive | Denial | Religious | Emotion | Accept | Focus | Instrum. | Behav. d. | Active | Restraint | Humour | Planning | Suppress | Substance |
|------------------|-----------------|---------------|------------------|----------------|---------------|--------------|-----------------|------------------|---------------|------------------|---------------|-----------------|-----------------|------------------|
| Positive | 1.00 | .019 | .190 | .366** | .387** | .139 | .335** | -.058 | .639*** | .375** | .114 | .318* | .415** | .135 |
| Denial | | 1.00 | .360** | .002 | -.049 | .260 | -.296* | .546*** | -.116 | .041 | .053 | -.044 | .171 | .018 |
| Religious | | | 1.00 | .296* | .030 | .341* | .029 | .238 | .146 | .284* | -.023 | .138 | .282* | .033 |
| Emotion | | | | 1.00 | -.117 | .496*** | .669*** | .096 | .337* | -.016 | .112 | .167 | .257 | .128 |
| Accept | | | | | 1.00 | -.094 | -.057 | -.097 | .268* | .253 | .180 | .276* | .288* | .183 |
| Focus | | | | | | 1.00 | .154 | .215 | .120 | .119 | -.080 | -.061 | .295* | .156 |
| Instrum. | | | | | | | 1.00 | -.145 | .431** | .051 | .156 | .386** | .171 | -.131 |
| Behav. d. | | | | | | | | 1.00 | -.416** | -.049 | -.117 | -.182 | -.103 | .294* |
| Active | | | | | | | | | 1.00 | .336* | .122 | .565*** | .466*** | -.271* |
| Restraint | | | | | | | | | | 1.00 | -.136 | .520*** | .314* | -.250 |
| Humour | | | | | | | | | | | 1.00 | .037 | -.026 | .028 |
| Planning | | | | | | | | | | | | 1.00 | .393** | -.240 |
| Suppress | | | | | | | | | | | | | 1.00 | -.031 |
| Substance | | | | | | | | | | | | | | 1.00 |

Note: Where a subscale name was shortened to fit the table parameters, the full subscale name was provided here: Positive = positive reinterpretation; Religious = Religious coping; Emotion = Use of emotional social support; Accept = Acceptance; Focus = Focus on and venting of emotions; Instrum. = Use of instrumental social support; Behav. d. = Behavioural disengagement; Active = Active coping; Suppress = Suppression of competing activities; Substance = Substance Use. * $p < .05$, ** $p < .01$, *** $p < .0005$ (the last alpha level includes the Bonferroni correction for the number of correlations calculated).

As was expected, the 'use of instrumental social support' and 'use of emotional social support' subscales were positively correlated above .3. 'Use of emotional social support' was also positively correlated with theorised problem-focused strategies (active coping) and emotion-focused strategies (turning to religion and focus on and venting of emotions), thereby bridging both constructs. Because of the theorised conceptual differences between the two functions of social support (Carver et al., 1989) 'use of instrumental social support' was retained in group one (tentatively titled problem-focused coping strategies), and 'use of emotional social support' was placed in the second group (emotion-focused strategies).

Inspection of the positive correlations of .30 or over resulted in two tentative groupings. The first group included: 'positive reinterpretation', 'acceptance', 'use of instrumental social support', 'active coping', 'restraint', 'suppression of competing activities', and 'planning'. The second group included: 'denial', 'use of emotional social support', 'religious coping', 'focus on and venting of emotions', and 'behavioural disengagement'. The 'substance use' and 'humour' subscales did not positively correlate with any other subscale at .3 or over in either grouping.

The negative correlations between subscales supported the tentative separation of these two groups. All negative correlations were small with the exception of 'denial' and 'use of instrumental social support' at -.30 and 'behavioural disengagement' and 'active coping' at -.42. All subscales of the first group correlated negatively with one to five subscales in the second group. Four of the five subscales of the second group correlated negatively with two to seven subscales in the first group. In the second group, 'religious coping' was not negatively correlated with any of the first group subscales. The basis for the decision of placing it in the second grouping is due to its theoretical positioning with these subscales (Carver et al., 1989) and its positive moderate correlations with other subscales in that group. There was one negative correlation between subscales in group one with 'use of instrumental social support' negatively correlated with 'acceptance' (-.06). This is not unexpected given that the social

support subscales can bridge both problem-focused and emotion-focused coping constructs and can not be expected to fit perfectly within either construct.

‘Acceptance’ and ‘positive reinterpretation and growth’ are both special cases. Both have been traditionally conceptualised as emotion-focused coping strategies (Lazarus & Folkman, 1984); however, in this sample they were more positively correlated with the problem-focused strategies (at time two, ‘acceptance’ is positively correlated with ‘active coping’, ‘restraint’, and ‘planning’ and, at both time points, shows no positive relationship above .3 with any subscales in the second group). Nakamura and Orth (2005) discuss the distinction between active and resigning acceptance, allowing that active acceptance (as evidenced by the COPE acceptance items) is a form of accepting the stressor and its implications to enhance problem-focused coping. As the COPE acceptance subscale measures active acceptance and as there are positive correlations between ‘acceptance’ and the proposed problem-focused strategies (with no positive correlations with the proposed emotion-focused strategies), acceptance was retained in the first group.

‘Positive reinterpretation and growth’ also bridges both concepts with some authors claiming it is a problem-focused coping strategy (Seltzer, Greenberg, & Krauss, 1995) and others claiming it is an emotion-focused coping strategy (Lazarus & Folkman, 1984). In the latter interpretation, ‘positive reinterpretation and growth’ is aimed at managing negative emotions rather than directly addressing the stressor (Carver et al., 1989). However, it also has problem-solving functions in that it allows the individual to re-determine the stressor as a challenge rather than a threat which can lead to direct coping efforts (Carver et al., 1989). In this study, ‘positive reinterpretation and growth’ was the only variable that positively correlated with most of the problem-focused coping strategies at both time points and showed only one correlation with the emotion-focused coping strategy ‘use of emotional social support’ which is known to bridge both concepts. Due to these findings, it is argued that ‘positive reinterpretation

and growth' within this sample is a strategy used to support and perhaps initiate problem-focused activities and therefore it has been classed within the first group.

5.2.2.4.1 Cronbach alpha coefficients of proposed groups at time one

A Cronbach alpha coefficient was calculated to test the internal consistency of the proposed groups. Each was then tested to determine if improved Cronbach alpha coefficients could be attained by inclusion of the 'humour' subscale (as this did positively correlate above .3 with 'positive reinterpretation and growth' but only at time two). The 'substance use' variable was dropped from further analyses given its lack of positive relationships over .3 with any other variable.

The Cronbach alpha coefficient for group one (including 'positive reinterpretation', 'acceptance', 'use of instrumental social support', 'active coping', 'restraint', 'suppression of competing activities', and 'planning') was .78. The Cronbach alpha coefficient for group two (including 'denial', 'religious coping', 'focus on and venting of emotions', 'behavioural disengagement', and 'use of emotional social support') was .65. For the second group, the mean inter-item correlation was .29.

The addition of the 'humour' subscale to the first group resulted in a lower Cronbach alpha coefficient of .72. Adding the 'humour' subscale to the second group resulted in a lower Cronbach alpha coefficient of .57 and a less than ideal mean inter-item correlation of .19. As 'humour' was not positively correlated with any subscale at time one and lowered the Cronbach alpha coefficient for each group, the 'humour' subscale was dropped from further analyses.

The optimal two-group split between variables at time one resulted in the following:

Group one

‘positive reinterpretation’
 ‘planning’
 ‘acceptance’
 ‘use of instrumental social support’
 ‘active coping’
 ‘restraint’
 ‘suppression of competing activities’

Group two

‘denial’
 ‘religious coping’
 ‘focus on and venting of emotions’
 ‘behavioural disengagement’
 ‘use of emotional social support’

Zeidner and Saklofske (1996) proposed that if coping styles are to be developed, the meaning and function of the strategies in question need to be investigated so that the general categories constructed provide meaningful summaries of the strategies themselves. To ensure the definitions of problem-focused and emotion-focused coping (as group one and group two are labelled respectively) fit with the strategies assigned to each group, the definitions of problem-focused and emotion-focused coping proposed by Lazarus and Folkman (1984) were reviewed and the following modifications (in italics) made: problem-focused coping was defined as approaching stressful situations with *active* problem-focused approaches *and intentions*, i.e., doing something to manage, alter, *change*, or *prepare for change in regard to* the stressful stimulus. Emotion-focused coping was defined as those behaviours or internal thoughts that result in a disengagement from the stressful stimulus *or a focus on the emotional impact of the stressful stimulus*. The example of reducing the emotional distress associated with the stressful episode was removed from this sample’s definition of ‘emotion-focused coping’ as it was hypothesised that use of the group two strategies (as a whole) could be for the purpose of either seeking a reduction in emotion or a means by which the individual maintained a high level of emotion with regard to threat or challenge. Lazarus & Folkman’s (1984) conceptualisation of emotion-focused coping included both qualities of regulation and enhancement of emotion in response to stress and the development of coping responses.

5.2.3 Summary

As comparisons were to be made between coping styles across time, the two-group split resulting from the analysis of the time one data was also used for calculating scores for the time two data. The time two data returned the following Cronbach alpha coefficients: group one = .78, and group two = .73. Further detail of the same analyses conducted with the time two data is outlined in Appendix J.

Using the definitions outlined above, group one is proposed to encapsulate problem-focused coping, whereas group two is proposed to encapsulate emotion-focused coping. A score on each of these two forms of coping for each participant was developed by the addition of all the subscale scores within each group. These two forms of coping were used as the measure of coping styles throughout the remainder of the analyses.

5.3 SAMPLE DESCRIPTION

The sample was made up of 56 participants. An attrition rate of seven interviewees resulted in data collected for 49 participants at the second interview. At the third time point (three months post-course), interviews were conducted with 49 participants, and at the fourth time point (six months post-course), interviews were conducted with 44 participants. Interviews were undertaken over a two-and-a-half year period.

A summary of participant demographic information is outlined in Table 3¹². All participants were students in adult vocational courses run through either Private Training Establishments (PTEs) including one Industry Training Organisation (ITO), a polytechnic, or a foundation

¹² Information is presented for 55 participants as one case was excluded from all analyses due to reports of distraction while completing tasks at both interview points.

studies course at a university. The sample included mostly female respondents (85.5%). The majority of the sample was 30 years or younger (52.7%) with 30.9% of that group aged between 16 and 20.

Respondents were able to choose more than one ethnic grouping when stating their ethnicity. This response format led to a variety of responses with 50.9% of participants identifying as New Zealand European, 18.2% as Maori, and 9.1% as NZ European and Maori; a higher percentage of Maori than that seen in the NZ population at the time of the 2006 Census – 67.6% New Zealand European, 14.6% Maori (Statistics NZ, 2007). All respondents claimed English as their first language, with four interviewees stating they had spoken another language from birth in addition to English.

Educational data collected related to the level of formal schooling and qualifications the participant had received prior to undertaking the vocational course they were on currently. Years of formal schooling were only considered if they were completed. The definitions used for Lower Secondary, Upper Secondary, Vocational or Trade Qualification, and University Qualification were based on the definitions used in a New Zealand study of demographic predictors of low literacy proficiency (Culligan et al., 2004). In this study educational level was defined as follows: Lower Secondary – Year 11 or lower; Upper Secondary – Years 12 and 13; Vocational or Trade Qualification –PTE or ITO qualification, including certificate level courses at polytechnics; University Qualification – university or polytechnic degree or diploma. Within the current sample, 32.7% of respondents held qualifications up to Level 1 (Year 11) National Certificate in Educational Achievement (NCEA) prior to beginning the current course.

Eighty-two percent of participants stated they were either unemployed, part-time employed, or in casual employment at the time of the first interview. As most were full-time students (90.9%) this is not surprising. Ten (18.2%) were in full-time employment.

Table 3
Summary of participant demographic information ($N = 55$)

| | Number of respondents | Percentage of respondents |
|---|-----------------------|---------------------------|
| Gender | | |
| Females | 47 | 85.5% |
| Males | 8 | 14.5% |
| Age group | | |
| 16-20 | 17 | 30.9% |
| 21-30 | 12 | 21.8% |
| 31-40 | 8 | 14.5% |
| 41-50 | 10 | 18.2% |
| 51-60 | 6 | 10.9% |
| 61-64 | 2 | 3.6% |
| Ethnicity | | |
| NZ European | 28 | 50.9% |
| Maori | 10 | 18.2% |
| NZ European + Maori | 5 | 9.1% |
| New Zealander | 4 | 7.3% |
| Pacific Peoples | 3 | 5.5% |
| Asian Peoples | 2 | 3.6% |
| NZ Chinese | 1 | 1.8% |
| Norwegian | 1 | 1.8% |
| Brazilian | 1 | 1.8% |
| Educational level completed | | |
| Lower secondary (Level 1 NCEA or less) | 18 | 32.7% |
| Upper secondary (Level 2 or 3 NCEA) | 31 | 56.4% |
| Vocational or trade qualification | 5 | 9.1% |
| University qualification | 1 | 1.8% |
| Employment status (at first interview) | | |
| Unemployed | 24 | 43.6% |
| Part-time employed (< 30 hours) | 15 | 27.3% |
| Full-time employed (>30 hours) | 10 | 18.2% |
| Casual employment | 6 | 10.9% |
| Health issues* | | |
| Eyesight issues (which have been rectified) | 14 | 48.3% |
| Hearing issues (which have been rectified) | 7 | 24.1% |
| Joint issues | 6 | 20.7% |
| Psychological issues | 2 | 6.7% |

* Twenty-two participants reported health issues. $N = 29$ as three participants had both hearing and sight issues, three had both hearing and joint issues, and one had both joint and psychological issues.

Participants were asked an open question as to whether they had any health issues that they

believed could affect their learning now (at the time of the first interview) or had in past courses or schooling. Twenty-two participants mentioned health issues, of which 72.4% mentioned hearing or eyesight issues but claimed these were rectified through the use of hearing-aids and glasses respectively, and/or behavioural techniques such as sitting close to the front of the classroom. Joint issues affected six (20.7%) participants and these included issues such as sore backs from sitting too long, Arthritis, or Repetitive Strain Injury (RSI) due to typing. Two respondents (6.7%) reported psychological issues including Aspergers Syndrome and Clinical Depression that affected their ability to concentrate in the classroom and on course assignments occasionally.

Table 4 shows the three types of course that respondents were enrolled in (University, Polytechnic, or PTE) by the mean length of the course.

Table 4
Length of course by type of course

| Type of course | Length of course (number of days) | | | |
|---|-----------------------------------|-----------|---------|---------|
| | <i>M</i> | <i>SD</i> | Minimum | Maximum |
| University (n = 3) | 213.67 | 85.45 | 115 | 263 |
| Polytechnic (n = 23) | 277.22 | 114.68 | 130 | 513 |
| PTE* (n = 29) | 277.48 | 240.41 | 84 | 1153 |

* The PTE means are influenced by the inclusion of two participants in apprenticeships of approximately three years. As an indicator, the median number of days in the course for those in PTE programmes was 255.00 days.

5.4 PERSISTENCE

One research question and the associated hypotheses of this thesis were:

1. Can coping style, adaptability, or prose literacy score predict persistence in the course?

Hypothesis One: Participants who persist in the course will have higher problem-focused coping scores on average than those that do not persist.

Hypothesis Two: Participants who persist in the course will have lower emotion-focused coping scores on average than those that do not persist.

Hypothesis Three: Participants who persist in the course will have higher adaptability scores on average than those that do not persist.

Hypothesis Four: Participants who persist in the course will have higher prose literacy scores on average than those that do not persist.

Forty-one participants persisted in their course and eight respondents did not. Persistence was defined as staying in the course until the end date as set by the course timetable, and was thus measured as a dichotomous variable with two values: ‘persisted’ and ‘did not persist’. An interviewee did not have to pass the course to be considered to be persisting. The measurement of persistence was reliant on self-report and was checked with the participant at the second or third interview.¹³

The sub-sample of non-persisters was too small to allow for a logistic regression analysis as originally proposed to answer the above research questions and hypotheses. Therefore, independent-samples *t*-tests were conducted to provide information on the relationship between persistence and literacy level, coping style, and adaptability. These findings should be treated as indicative only as the *n* across the levels of the persistence variable was not equal. However, firstly, descriptive information by persistence is provided for consideration.

¹³ Dependent on the timing of the second interview, some participants may have been in the final week of the course when interviewed for the second time.

5.4.1 Descriptive information and persistence

Descriptive information was provided for those that persisted in the course and those that did not to provide further indicative information on the potential influencing factors on persistence.

5.4.2 Demographic information

Table 5 outlines the demographic information for the ‘persisted’ and ‘did not persist’ groups. Chi-square tests of association were not undertaken due to the sample size of the ‘did not persist’ group. Of interest, initial indications were that the ‘persisted’ and ‘did not persist’ groups were similar in terms of proportions for most of the demographic variables. Health information, however, showed that half of the ‘did not persist’ group indicated they had health issues that could affect their learning or completion of coursework, while nearly two-thirds of the ‘persisted’ group stated they had no such health issues. Of interest, the majority of ‘non-persisters’ were unemployed (62.5%) compared to ‘persisters’ of which 39.0% were unemployed. This result indicated that those who persisted were more likely to be in some form of employment (particularly casual employment) while completing their programme of study.

Table 5
Summary of demographic and course information for persisting and non-persisting interviewees

| | Persisted (<i>n</i> = 41) | | Did not persist (<i>n</i> = 8) | |
|-----------------------------------|----------------------------|---------------------------|---------------------------------|---------------------------|
| | Number of respondents | Percentage of respondents | Number of respondents | Percentage of respondents |
| Gender | | | | |
| Females | 35 | 85.4% | 6 | 75.0% |
| Males | 6 | 14.6% | 2 | 25.0% |
| Age group | | | | |
| 16-20 | 12 | 29.3% | 3 | 37.5% |
| 21-30 | 8 | 19.5% | 2 | 25.0% |
| 31-40 | 5 | 12.2% | 1 | 12.5% |
| 41-50 | 9 | 22.0% | 1 | 12.5% |
| 51-60 | 5 | 12.2% | 1 | 12.5% |
| 61-64 | 2 | 4.9% | 0 | 0.0% |
| Ethnicity* | | | | |
| NZ European | 26 | 59.1% | 6 | 66.6% |
| Maori | 10 | 22.7% | 2 | 22.2% |
| New Zealander | 4 | 9.1% | 0 | 0.0% |
| Pacific Peoples | 1 | 2.3% | 1 | 11.1% |
| Asian Peoples | 2 | 4.5% | 0 | 0.0% |
| Brazilian | 1 | 2.3% | 0 | 0.0% |
| Educational level | | | | |
| Lower secondary | 13 | 31.7% | 3 | 37.5% |
| Upper secondary | 24 | 58.5% | 4 | 50.0% |
| Vocational or trade qualification | 3 | 7.3% | 1 | 12.5% |
| University qualification | 1 | 2.4% | 0 | 0.0% |
| Employment status | | | | |
| Unemployed | 16 | 39.0% | 5 | 62.5% |
| Part-time employed (<= 29 hrs) | 11 | 26.8% | 2 | 25.0% |
| Full-time employed (>= 30 hrs) | 8 | 19.5% | 1 | 12.5% |
| Casual employment | 6 | 14.6% | 0 | 0.0% |
| Health issues | | | | |
| Health issues present | 16 | 39.0% | 4 | 50.0% |
| Health issues not present | 25 | 61.0% | 4 | 50.0% |
| Type of vocational course | | | | |
| PTE | 23 | 56.1% | 6 | 75.0% |
| Polytechnic | 15 | 36.6% | 2 | 25.0% |
| University | 3 | 7.3% | 0 | 0.0% |

* Respondents were able to choose more than one ethnic identity.

5.4.3 Persistence by time variables

The time variables that could influence persistence are outlined in Table 6. The range and mean statistics for the length of the course in days was included. The length of time between the participant's start date and the course end-date was included to indicate the time the participant believed they were committing themselves to. The mean and range statistics for the length of time the course had been running before the participant began are also included in Table 6 as it is possible that those that started the course later may have been unlikely to persist given the amount of work they may have needed to catch up on. All time factors were measured in number of days. It is important to note that courses were not necessarily held every day during each given timeframe.

Table 6
Mean and range statistics of potential time factors suggested to influence persistence by persistence type

| | Persisted (<i>n</i> = 41) | | Did not persist (<i>n</i> = 8) | |
|--|----------------------------|-----------|---------------------------------|-----------|
| | Mean | Range | Mean | Range |
| Length of course* (days) | 285.24 | 84 - 1153 | 251.13 | 136 – 502 |
| Time spent in course (days) | 279.49 | 84 - 1153 | 166.62 | 39 - 385 |
| Time difference between course start date and participant start date (days) | 0.68 | 0 - 14 | 4.38 | 0 - 35 |

* Two cases within the 'persisted' group had over 1000 days in the length of course overall. These cases were included in the figures in the table, but subsequent removal resulted in a mean of 243.77 and a range of 84-513 for 'length of course', a mean of 237.732 and a range of 84-501 for 'time spent in course', and a mean of .72 and a range of 0-14 for 'time difference between course start date and participant start date'. The *N* for these analyses was *N* = 49.

Those in the 'persisted' group began courses that were longer on average ($M = 285.24$ days) than those in the 'did not persist' group ($M = 251.13$ days). A Mann-Whitney U Test¹⁴ was conducted and found the median length of course for persisters ($Md = 276.00$) did not differ significantly from non-persisters ($Md = 227.50$), $U = 157.00$, $z = -.19$, $p = .85$. Those in the 'did

¹⁴ Non-parametric tests were used with the time variables as they did not meet normality assumptions in untransformed or transformed forms.

not persist' group also indicated that they started on their courses later on average ($M = 4.38$ days after the course had begun) than the 'persisted' group ($M = 0.68$ days). A Mann-Whitney U Test found the median start date of participants did not significantly differ between persisters ($Md = .00$) and non-persisters, ($Md = .00$), $U = 154.00$, $z = -.57$, $p = .57$. Not surprisingly, the time spent in the course by these groups of participants differed ($M = 279.49$ for the 'persisted' group and $M = 166.62$ for the 'did not persist' group). A Mann-Whitney U Test found no significant difference between the time spent in the course between those that persisted ($Md = 276.00$) and those that did not persist, ($Md = 152.00$), $U = 99.00$, $z = -1.76$, $p = .08$. This may have been due to the small sample size particularly in the 'did not persist' group. Interestingly, a wide range of time spent in the course was reported by respondents from the 'did not persist' group with at least one attending for 385 days.

5.4.4 Coping style and persistence

The relationship of persistence with the two coping styles of problem-focused and emotion-focused coping at time one and time two was explored. A logarithmic transformation of the emotion-focused coping scores at time one and time two allowed for a normal distribution of both variables. All other assumptions (interval data, homogeneity of variance (for all variables except time two problem-focused coping), and independent observations) were met.

An independent-samples t -test showed the mean problem-focused coping scores for persisters ($M = 79.20$, $SD = 9.13$) and non-persisters at time one ($M = 78.62$, $SD = 16.06$) did not differ significantly, $t(7.90) = .10$, $p = .93$, $d = .04$, *Statistical Power (SP)* = .06¹⁵ (using equal variances not assumed statistics). Persisters at time two ($M = 78.25$, $SD = 8.95$) also did not show a significant difference in mean problem-focused coping scores from non-persisters ($M =$

¹⁵ Cohen's d was calculated through use of Becker's (1999) effect size calculators. Statistical power was calculated through the GPower programme (Version 2.0) (Faul & Erdfelder, 1992).

76.62, $SD = 14.16$), $t(46) = .42$, $p = .67$, $d = .14$, $SP = .10$.

An independent samples t -test found respondents who persisted showed significantly lower emotion-focused coping scores on average at time one ($M = 41.15$, $SD = 10.13$) than their non-persisting peers ($M = 53.25$, $SD = 8.37$), $t(47) = -3.09$, $p = .003$, $d = .90$, $SP = .74$. At time two, the same pattern was seen with persisters showing significantly lower emotion-focused coping scores on average ($M = 39.68$, $SD = 9.73$) than non-persisters ($M = 47.88$, $SD = 10.67$), $t(46) = -2.11$, $p = .04$, $d = .80$, $SP = .65$. The low power of the tests in this section is likely attributable to the uneven distribution of participants across groups.

5.4.5 Adaptability and persistence

Persistence was explored for its relationship with adaptability at time one and time two. The time one and time two adaptability measures met the assumption of normality (following the removal of one outlier value at time one). All other assumptions (homogeneity of variance, interval data, and independent observations) were also met.

An independent-samples t -test showed participants who persisted did not have significantly different mean adaptability scores at time one ($M = 97.83$, $SD = 17.37$) when compared against their non-persisting peers ($M = 100.38$, $SD = 13.81$), $t(47) = -.39$, $p = .70$, $d = .16$, $SP = .11$. At time two, the same pattern was seen with persisters showing no significant difference in average adaptability scores ($M = 90.65$, $SD = 18.01$) from non-persisters ($M = 87.75$, $SD = 19.17$), $t(46) = .41$, $p = .68$, $d = .16$, $SP = .11$.

5.4.6 Persistence and prose literacy score

Table 7 shows the mean literacy level for respondents grouped by the persistence variable.

A 20-point increase in mean literacy scores can be seen for the ‘persisted’ group from time one to time two. Of the respondents that did not persist, there was no difference between the literacy means at time one and time two.

Table 7
Mean prose literacy score by level of persistence ($N = 55$)

| | Persisted | Did not persist | Unknown |
|---------------------------------------|------------------------|-----------------------|----------------------------------|
| Mean prose literacy score at time one | 292.44 ($n = 41$) | 285.00 ($n = 8$) | 285.00 ($n = 6$) |
| Mean prose literacy score at time two | 312.50 ($n = 40$) | 285.00 ($n = 8$) | No respondents fit this category |

An independent-samples t -test was conducted to test for any difference between persisters and non-persisters in mean literacy level at each time point. All variables met the assumptions of independent observations, homogeneity of variance, levels of measurement, and normality (when literacy score at both time points were transformed using reflect and square root procedures and an extreme outlier score was removed from time one).

At time one, average literacy scores of persisters ($M = 292.44$, $SD = 33.60$) and non-persisters ($M = 285.00$, $SD = 35.46$) did not differ, $t(46) = -.43$, $p = .67$, $d = .22$, $SP = .14$. However, at time two, a significant difference in the average literacy score was found for persisters ($M = 312.50$, $SD = 35.14$) and non-persisters ($M = 285.00$, $SD = 35.46$), $t(46) = -1.98$, $p = .05$, $d = .78$, $SP = .63$. As above, the low power of this test is likely attributable to the uneven distribution of participants across groups.

Further, a paired-samples t -test was also conducted for the group of respondents who had persisted in the course to determine if there was a difference between mean literacy score at time one and time two. One case was dropped from the analysis due to a lack of paired data available. The literacy score difference was not normally distributed; however, Pallant (2007) notes that t -tests are robust to violations of this assumption when sample sizes are larger than

30, as was the case for the present data.

There was a statistically significant improvement in literacy scores from time one ($M = 288.70$, $SD = 28.82$) to time two ($M = 307.92$, $SD = 36.32$) following persistence in an adult vocational course, $t(38) = 8.87$, $p = .0001$, r (effect size) = .82, $SP = .98$.

5.4.7 Summary

Hypothesis one was not supported. Participants who persisted in the course did not differ from non-persisters in problem-focused coping scores at either time point.

Hypothesis two was supported. Participants who persisted in the course had significantly lower emotion-focused coping scores than those that did not persist at both time points.

Hypothesis three was not supported. Participants who persisted in the course did not show higher average adaptability scores than those that did not persist.

Hypothesis four was partially supported. At time one, there was no difference in the average literacy score for persisters and non-persisters. However, at time two, participants who persisted in the course showed higher literacy scores on average than those who did not persist.

5.5 MULTIPLE REGRESSION

Two multiple regressions were conducted: one with time one data, and the second with time two data. In both analyses, emotion-focused coping and problem-focused coping were entered first in the models as these were the two concepts of primary interest. Adaptability, while correlated with emotion-focused and problem-focused coping, is theorised to measure a separate

construct and was entered in a second step to determine if any further variance in prose literacy level could be explained by its inclusion. These analyses sought to answer the following research questions and test the associated hypotheses:

2. Does coping style explain a significant amount of variance in prose literacy score?

Hypothesis five: Increases in problem-focused coping score will be significantly associated with increases in prose literacy score.

Hypothesis six: Increases in emotion-focused coping score will be significantly associated with decreases in prose literacy score.

3. Does adaptability explain a significant amount of variance (over and above coping style) in prose literacy score?

Hypothesis seven: Increases in adaptability score will be significantly associated with increases in prose literacy score.

Hypothesis eight: Adaptability will explain a significant amount of variance in prose literacy score once the effect of both coping styles is taken into account.

5.5.1 Data screening

Multiple regression assumptions of normality, linearity, homoscedasticity, and independence of the residuals were checked, along with sample size, multicollinearity, singularity, and the presence of outliers (Pallant, 2007). Two outliers were removed from the time one literacy score variable and one outlier was removed from the adaptability measure¹⁶. With regard to sample size the present study had a ratio of approximately 18 cases to each of the

¹⁶ Inspection of the residuals from initial multiple regression analyses found two cases unduly influenced the time one model, and two cases unduly influenced the time two model. Removal of these cases resulted in an *N* of 53 for the time one data and an *N* of 46 for the time two data. For all analyses in this section, the sample used reflects the removal of these two cases at time one and time two, respectively.

originally proposed three variables at time one, and approximately 16 cases to each variable at time two. Tabachnick and Fidell (2007) recommend a minimum of five cases per variable, while Field (2005) quotes traditional views of 10 or 15 cases needed per variable. The assumptions of normality, linearity, homoscedasticity, and independence of the residuals were met, and the singularity assumption was not violated.

The assumption of multicollinearity was checked following both analyses. Field (2005) suggests a correlation between variables of above .9 indicates multicollinearity. No variables were correlated above this level. As a further check, collinearity diagnostics in SPSS were generated following each analysis. Belsely, Kuh, and Welsch's (1980, cited in Tabachnick and Fidel, 2007) criteria for judging multicollinearity suggests variables may be multicollinear when a conditioning index greater than 30 is found combined with two or more variance proportions greater than .50 for two or more variables. At time two, problem-focused coping and adaptability scores violated this criterion with a conditioning index of 30.66 and variance proportions of 1.00 and .62, respectively. However, this relationship was not found at time one where the same results regarding the significance of problem-focused coping and the non-significance of adaptability were found in the regression model, suggesting that this relationship is not overly influential on the outcome.

5.5.2 Variables

5.5.2.1 Confounding variables

Seven variables (over and above the originally hypothesised variables) were investigated for inclusion in the regression, including a measure of level of formal education, the only significant demographic predictor of adult literacy level in an analysis of the New Zealand IALS data (Culligan et al., 2004). Type of course was significantly related to the dependent variable of

literacy score at time one and was included in the multiple regression for this time point. Table 8 shows the bivariate relationship of each variable with literacy score. Further information on each of these variables is provided in Appendix K. All the time variables explored here were calculated from respondent self-reports and course programme information, and met the assumptions of correlation unless otherwise stated.

Table 8
Bivariate correlations for potential influencing variables on prose literacy score

| Variable | Assessment one | | Assessment two | |
|--|----------------|-----------|----------------|-----------|
| | Statistic | <i>p</i> | Statistic | <i>p</i> |
| Health | $r_{pb} = .03$ | $p = .84$ | $r_{pb} = .02$ | $p = .90$ |
| Education^a | $r_b = .11$ | $p = .53$ | $r_b = .30$ | $p = .12$ |
| Type of course | $r_{pb} = .32$ | $p = .02$ | $r_{pb} = .21$ | $p = .16$ |
| Language | $r_{pb} = .05$ | $p = .71$ | $r_{pb} = .05$ | $p = .73$ |
| Number of days in course before first assessment | $r_b = .12$ | $p = .49$ | $r_b = .02$ | $p = .93$ |
| Number of days in the course | | | $r_b = .25$ | $p = .18$ |
| Number of days between the first and second assessments | | | $r_b = .13$ | $p = .51$ |

^a Education is measured as a dichotomous variable (Lower or Upper Secondary and Tertiary) as the continuous measure of this variable did not meet the assumption of normality in either transformed or untransformed form.

5.5.2.2 Original Variables

Bivariate relationships between the originally proposed Independent Variables (IVs) (emotion-focused coping, problem-focused coping, and adaptability) and literacy score (the Dependent Variable (DV)) were explored. The bivariate correlations between the IVs and DV are outlined in Table 9.

A check of assumptions for this analysis was carried out with all IVs. All IVs met the assumptions of interval level data and independent observations. All IVs met the assumption of

normality, with the exception of the literacy measurement at time two. While a reflect and square root transformation allowed this variable to meet the normality assumption, the variables against which it was to be compared violated this assumption when transformed. Thus, the literacy variable was left untransformed for this analysis. All variables met the assumption of homoscedasticity.

Table 9

Bivariate statistics between originally proposed IVs and prose literacy level

| | Assessment one | | Assessment two | |
|-------------------------------|----------------|-----------|----------------|-----------|
| | Statistic | <i>p</i> | Statistic | <i>p</i> |
| Emotion-focused coping | $r = -.16$ | $p = .28$ | $r = -.33$ | $p = .02$ |
| Problem-focused coping | $r = .33$ | $p = .02$ | $r = .29$ | $p = .05$ |
| Adaptability | $r = .37$ | $p = .01$ | $r = .22$ | $p = .15$ |

5.5.3 Hierarchical regression of time one data

A hierarchical multiple regression was completed for data at time one and time two separately. At time one, type of course (a dichotomous variable of PTE or Polytechnic/University) was entered as the first step. As emotion-focused coping and problem-focused coping were the factors of primary interest and are theorised to be present (albeit to differing degrees) in any coping situation (Lazarus & Folkman, 1984), they were entered into a hierarchical multiple regression model as the second step. Adaptability was entered in a third block.

At time one, the first two blocks showed a significant difference from zero and a significant difference from the first block, respectively. Type of course alone explained 9.7% of the variance in prose literacy score. The addition of emotion-focused and problem-focused coping explained an extra 15.6% of the variance. The addition of adaptability in the third block explained an additional 5.1% of variance in prose literacy score. However, this was not a

significant change. The second block model including type of course, emotion-focused, and problem-focused coping was significant, $F(46) = 5.18$, $p = .004$. Table 10 shows the contribution of each variable to each model at the first two steps. The difference between the R^2 and adjusted R^2 values showed that if the second step model was applied to the population, the model would account for 4.8% less variance than it does when applied to this sample (Field, 2005).

Table 10
Multiple regression statistics for the time one variables

| | <i>B</i> | <i>S.E.</i> | <i>Stand. B</i> | <i>t</i> | <i>p</i> | <i>95% C.I.</i> | |
|------------------------|----------|-------------|-----------------|----------|----------|-----------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Step one | | | | | | | |
| Type of course | 15.75 | 6.94 | .31 | 2.27 | .03 | 1.79 | 29.71 |
| Constant | 284.34 | 4.77 | | 59.64 | .00 | 274.75 | 293.92 |
| Step two | | | | | | | |
| Type of course | 14.00 | 6.48 | .28 | 2.16 | .04 | .96 | 27.04 |
| Emotion-focused coping | -.65 | .34 | -.26 | -1.93 | .06 | -1.32 | .03 |
| Problem-focused coping | .91 | .31 | .39 | 2.88 | .01 | .27 | 1.54 |
| Constant | 214.60 | 24.93 | | 9.69 | .00 | 191.41 | 291.79 |

Note: Statistics for step one: $R = .31$, Total $R^2 = .10$, Adjusted $R^2 = .08$, R^2 change = .10, Sig. F Change = .03, $SP = .98$. Statistics for step two: $R = .50$, Total $R^2 = .25$, Adjusted $R^2 = .20$, R^2 change = .16, Sig. F Change = .01, $SP = .99$.

The optimum (second step) model showed that participants in Polytechnic/University courses were more likely to have higher prose literacy scores. Further, as problem-focused coping scores increased by one standard deviation (or 10.85 points), literacy scores increased by 9.82 points, $t(46) = 2.88$, $p = .01$, 95% $CI = .27 - 1.54$. As the confidence interval did not cross zero, the positive relationship seen in this sample is indicative of what would be found in the population from which this sample is drawn.

The residuals were inspected following the criteria suggested by Field (2005). Inspection of Cooks Distance, Leverage Values, Standardised Residuals, DFBeta scores, Standardised DFFit,

and the Covariance Ratios showed no cases of concern.

5.5.3.1 Hierarchical regression of time two data

At time two, emotion-focused coping and problem-focused coping were entered into a hierarchical multiple regression model as the first step. Adaptability was entered in a second block.

The model containing emotion-focused and problem-focused coping (step one) explained 28.2% of the variance in prose literacy score. This model was significantly different from zero ($p = .001$). The inclusion of adaptability explained an additional 3.9% of the variance in literacy score; however, this was a non-significant addition to the prior model. Table 11 shows the contribution of each variable to the first model. The difference between the R^2 and adjusted R^2 values showed that if the first step model was applied to the population, it would account for 3.3% less variance than the model applied to this sample.

Table 11
Multiple regression statistics for the step one model at time two

| | <i>B</i> | <i>S.E.</i> | <i>Stand. B</i> | <i>t</i> | <i>p</i> | <i>95% C.I.</i> | |
|-------------------------------|----------|-------------|-----------------|----------|----------|-----------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Emotion-focused coping | -1.57 | .46 | -.47 | -3.45 | .001 | -2.49 | -.65 |
| Problem-focused coping | 1.54 | .48 | .44 | 3.21 | .003 | .57 | 2.50 |
| Constant | 253.20 | 36.48 | | 6.94 | .00 | 179.63 | 326.78 |

Note: Statistics for step one: $R = .53$, Total $R^2 = .28$, Adjusted $R^2 = .25$, R^2 change = .28, Sig. F Change = .001, $SP = .99$.

At the second time point, as emotion-focused coping scores increased by one standard deviation (or 10.42 points), literacy scores decreased by 16.38 points, $t(43) = -3.45$, $p = .001$, 95% $CI = -2.49 - -.65$. As this confidence interval does not cross zero, the direction of the relationship in this sample is indicative of what would be seen in the population. Further, as

problem-focused coping scores increased by one standard deviation (or 9.89 points), literacy scores increased by 15.20 points, $t(43) = 3.21$, $p = .003$, 95% $CI = .57 - 2.51$. As the confidence interval also did not cross zero, the positive relationship seen in this sample is indicative of what would be found in the population from which this sample is drawn.

Once again, the residuals were inspected following the criteria suggested by Field (2005). Inspection of Cooks Distance, Leverage values, Standardised Residuals, DFBeta scores, Standardised DFFit, and the Covariance Ratios showed no cases of concern.

5.5.4 Summary

Hypothesis five was supported. At time one and two higher problem-focused coping scores were significantly associated with higher literacy scores.

Hypothesis six was partly supported. Higher emotion-focused coping scores were significantly associated with lower literacy scores at time two. However, at time one, while the relationship trended in the direction predicted, this did not reach statistical significance.

Hypotheses seven and eight were not supported. Increases in adaptability scores were not associated with increases in literacy scores at either time point, and did not explain a significant amount of variance above coping style.

An unexpected finding was that type of course was significantly associated with higher prose literacy levels at time one. This variable was not included in the time two analysis due to a lack of a significant bivariate relationship with literacy score at this time point. It is not unexpected that those beginning at Polytechnic or University courses would overall have higher levels of prose literacy than those who undertake courses at local PTEs.

5.5.5 Specific coping strategies

To provide further descriptive interpretation of the results above, the mean score for each specific coping strategy was calculated to determine if there was a general preference for the group of strategies as a whole or whether the coping style effect seen in the above analyses was influenced by key strategies within each grouping. Figures 2 and 3 show the frequency of use of problem-focused coping strategies by literacy level and measurement point. Literacy level was determined through use of the IALS and ALLS assignment of scores below 275 to low levels of literacy and scores above 276 to high levels of literacy (Ministry of Education, 2007; OECD, 2000).

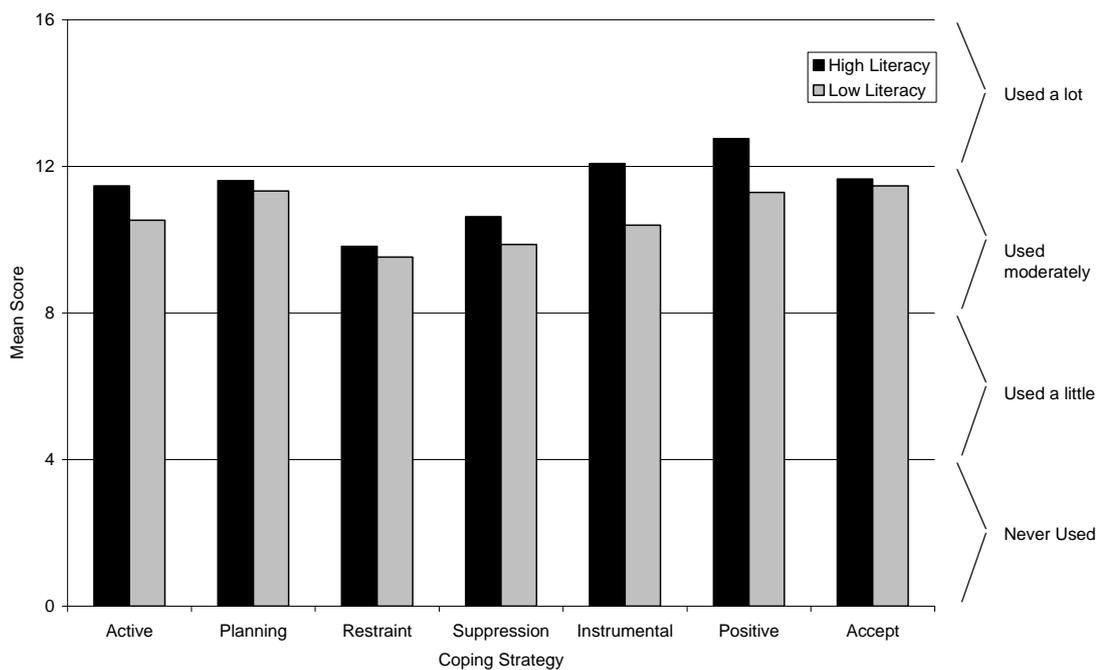


Figure 2. Problem-focused coping strategies by frequency of use and literacy level at time one.

As can be seen in Figure 2, the use of particular problem-focused strategies by those of differing literacy levels shows those of higher literacy levels tend to use each of these strategies more frequently. These differences, however, are small with the exception of the ‘use of instrumental social support’ and ‘positive reinterpretation and growth’. At time two (as shown

in Figure 3) the pattern is similar to that at time one; however, there are increases in the use of ‘active coping’, and ‘planning’, and a decrease in the use of ‘suppression of competing activities’ by those of higher literacy levels.

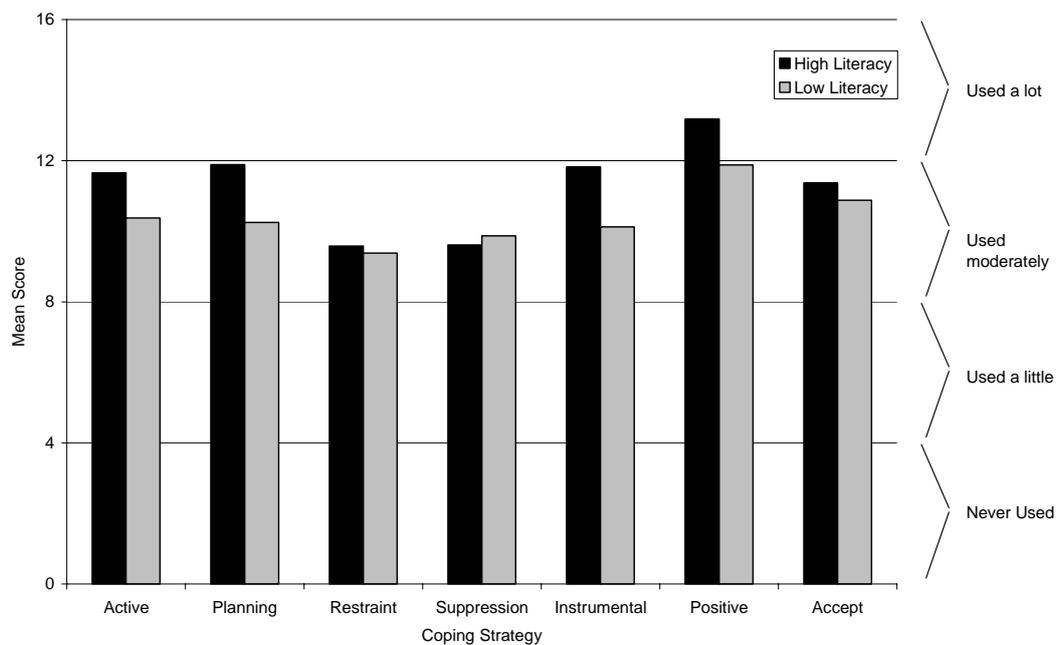


Figure 3. Problem-focused coping strategies by frequency of use and literacy level at time two.

Figures 4 and 5 show the same information for emotion-focused strategies. The overall pattern in these graphs is the more frequent use of avoidance strategies such as ‘denial’, ‘behavioural disengagement’, and ‘turning to religion’ by those with low literacy levels across time. Interestingly, participants with high literacy levels appeared to be more likely to make ‘use of emotional social support’ than those with low literacy levels. Both groups exhibited a similar level of use of ‘focus on and venting of emotions’.

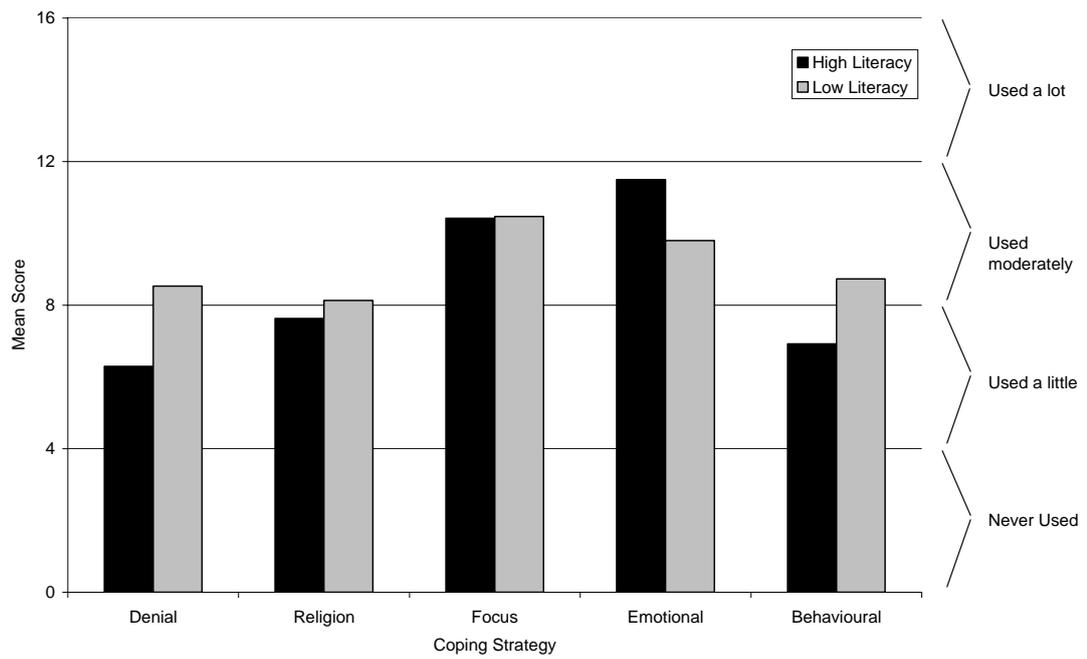


Figure 4. Emotion-focused coping strategies by frequency of use and literacy level at time one.

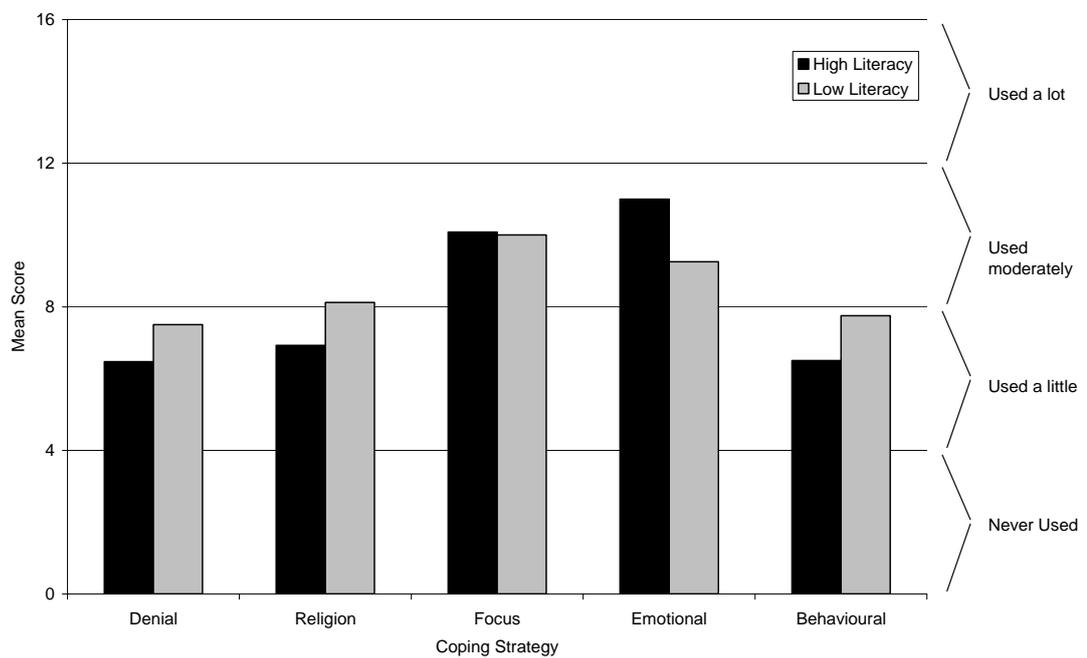


Figure 5. Emotion-focused coping strategies by frequency of use and literacy level at time two.

5.6 CHANGES OVER TIME

Due to the conflicting literature with regard to changes over time associated with dispositional coping (see Schwarzer & Schwarzer, 1996, and Krohne, 1993 for a discussion), hypotheses were not generated in this section. Instead a research question was proposed which was investigated via a series of paired *t*-tests¹⁷:

4. Do coping styles, adaptational strategies, or prose literacy scores change over time?

5.6.1 Data screening

The assumptions of *t*-tests were explored for fit with all the variables as applicable. All variables were measured on a continuous scale and were derived from scores based on independent observations. Skewness, kurtosis, and Shapiro-Wilk statistics were calculated and histograms inspected for all the variables. Literacy level at time two and emotion-focused coping at time one deviated from normality. Both literacy variables met the assumption of normality following a reflect and square root transformation while both emotion-focused coping variables met the assumption following a logarithmic transformation. The difference scores between time one and time two scores on each variable (the transformed versions where applicable) were all normally distributed.

5.6.2 *t*-tests

Paired *t*-tests found, on average, emotion-focused coping scores decreased and adaptability

¹⁷ Patterns of change, for example, whether literacy score changed in a predictable pattern with coping score over time, were not explored. Prior research argues that hypotheses of this nature cannot be adequately explored with data collected at less than three time points (Singer & Willett, 2003).

scores decreased significantly over time. Average literacy scores increased significantly over time, while problem-focused coping scores did not differ significantly from time one to time two. The findings are presented in Table 12.

Table 12
Change in coping style, adaptability, and prose literacy from time one to time two

| Variable | <i>M</i> | <i>SD</i> | <i>t</i> | <i>df</i> | <i>p</i> | <i>r</i> | <i>SP</i> |
|-------------------------------|----------|-----------|----------|-----------|----------|----------|-----------|
| Emotion-focused coping | | | | | | | |
| Time one | 43.25 | 10.35 | 2.06 | 47 | .05 | .29 | .41 |
| Time two | 41.04 | 10.25 | | | | | |
| Problem-focused coping | | | | | | | |
| Time one | 78.33 | 11.12 | .95 | 47 | .35 | .14 | .17 |
| Time two | 77.98 | 9.83 | | | | | |
| Adaptability | | | | | | | |
| Time one | 97.07 | 16.82 | 3.23 | 47 | .002 | .43 | .67 |
| Time two | 90.17 | 18.03 | | | | | |
| Prose literacy | | | | | | | |
| Time one | 290.00 | 27.46 | 8.24 | 45 | <.001 | .78 | .99 |
| Time two | 307.92 | 36.32 | | | | | |

5.6.3 Summary

Problem-focused coping scores did not change significantly over time; however, prose literacy scores increased significantly from time one to time two. Emotion-focused coping scores and adaptability scores decreased significantly over the time between the first and second assessments.

5.7 GOAL ACHIEVEMENT SIX MONTHS POST-COURSE

At six months post-course a telephone interview with each participant was conducted to determine if the goals outlined in the prior interviews (at the end of the course and at three months post-course) were achieved or not achieved.

Post-course goals were a combined measure of achievement of goals regardless of their nature (either employment goals or further study). Data from 41 participants was used in this analysis. An employment goal achievement was defined as the report of part-time or full-time employment following a prior report of the wish to move into some form of employment (at the end-of-course or third-month interview mark). Information on this aspect was gathered from 37 participants. Participants who were already in employment at the first interview and did not intend to change their employer after the course were not included in the variable (i.e., their data was treated as missing). An achieved result with regard to study goals was defined as a report of movement into a part- or full-time programme of study (regardless of the field) following a prior report of the wish to undertake further study. If a participant had not expressed a desire to undertake further study, the participant's data were treated as missing. Information from 22 participants was included in the overall goal achievement variable. Some participants had both study and employment goals. In this case if one was achieved the participant was added to the achieved category of the overall measure.

Due to the small sample size goal achievement could not be split by employment and study factors. Regression analyses were, therefore, carried out with the combined overall goal achievement variable.

A logistic regression was proposed to answer the following research question and hypotheses:

5. Are coping styles, prose literacy score, and/or adaptational responses associated with achievement of post-course goals?

Hypothesis nine: High problem-focused coping scores at time two will be associated with post-course goal achievement at six months while low problem-focused coping scores will be associated with non-achievement.

Hypothesis ten: High emotion-focused coping scores at time two will be associated with non-achievement of post-course goals at six months while low emotion-focused coping scores will be associated with achievement.

Hypothesis eleven: High adaptability scores at time two will be associated with post-course goal achievement at six months while low adaptability scores will be associated with non-achievement.

Hypothesis twelve: High prose literacy scores at time two will be associated with post-course goal achievement at six months while lower prose literacy scores will be associated with non-achievement.

5.7.1 Variables

5.7.1.1 Potential confounds

Four variables were identified that could affect the relationship between the IVs and DV. These were: ‘overall time in the course’, ‘type of course’, ‘time out of the course before the second assessment’, and ‘formal educational level’ (all dichotomous variables). Chi-Square tests of independence were unable to be conducted on the relationships between these variables and the DV because of a violation of the cell count assumption in each case. Therefore, Table 13 shows phi coefficients as indicators of the strength of the relationships (Tabachnick & Fidell, 2007; Pallant, 2007).

Table 13
Phi coefficients of time, course type, and education variables by goal achievement

| Variable | Overall goal achievement | |
|---------------------------------|--------------------------|----------|
| | <i>Phi</i> | <i>p</i> |
| Course time ^a | .38 | .02 |
| Time end to second ^b | .13 | .54 |
| Course type | .38 | .02 |
| Education | .18 | .26 |

^a Course time refers to the length of time participants were in the course.

^b Time end to second refers to the length of time between the end of the course and the second assessment.

Overall time in the course and the type of course variable were significantly associated with overall goal achievement and were entered into the regression.

5.7.1.2 Original Independent Variables

The original IVs included problem-focused coping, emotion-focused coping, adaptability, and literacy score.¹⁸

Problem-focused coping, emotion-focused coping, and adaptability at time two met the assumptions of bivariate correlations of normality, homogeneity of variance, interval-level data, and independent observations. Literacy score was transformed to meet the assumption of normality. All other assumptions were met. Table 14 presents the bivariate relationships between the IVs and DV. Prose literacy score was the only variable that significantly correlated with overall goal achievement, with a small effect size.

¹⁸ All original IVs were continuous variables in the logistic regression for the goal achievement DV.

Table 14
Bivariate correlations between time two IVs and goal achievement

| Variable | Overall goal achievement | |
|-----------------|--------------------------|----------|
| | Statistic | <i>p</i> |
| Emotion-focused | $r_{pb} = .24$ | .13 |
| Problem-focused | $r_{pb} = .11$ | .51 |
| Adaptability | $r_{pb} = .15$ | .35 |
| Prose literacy | $r_{pb} = .39$ | .01* |

* $R^2 = .15$.

5.7.2 Logistic regression

All assumptions of logistic regression were met including linearity of the logits, investigated using Box-Tidwell Transformations (Tabachnick & Fidell, 2007), and independence of the observations.

5.7.2.1 Overall goal achievement

A hierarchical logistic regression analysis was performed for the overall goal DV. Type of course and Time in Course were inserted as block one, literacy score as block two, emotion-focused coping and problem-focused coping as block three, and adaptability as block four. The models for each block were all significant returning statistics of $\chi^2 (2, 41) = 1133, p = .003$, $\chi^2 (3, 41) = 14.76, p = .002$, $\chi^2 (5, 41) = 15.95, p = .01$, and $\chi^2 (6, 41) = 19.98, p = .003$, respectively. Table 15 outlines the individual statistics for each variable in each model.

Table 15
Logistic regression statistics for overall goal achievement group membership

| Model | <i>B</i> | <i>S.E.</i> | <i>Wald</i> | <i>df</i> | <i>P</i> | <i>Odds Ratio</i> | <i>95% C.I. for Odds Ratio</i> | |
|--------------------|----------|-------------|-------------|-----------|----------|-------------------|--------------------------------|--------------|
| | | | | | | | <i>Lower</i> | <i>Upper</i> |
| Block one | | | | | | | | |
| Type of course | -2.17 | 1.16 | 3.52 | 1 | .06 | .11 | .01 | 1.10 |
| Time in course | -2.17 | 1.16 | 3.52 | 1 | .06 | .11 | .01 | 1.10 |
| Constant | 4.30 | 1.43 | 9.03 | 1 | .003 | 73.40 | | |
| Block two | | | | | | | | |
| Type of course | -1.90 | 1.19 | 2.53 | 1 | .11 | .15 | .01 | 1.55 |
| Time in course | -1.92 | 1.19 | 2.58 | 1 | .11 | .15 | .01 | 1.53 |
| Prose literacy | .03 | .01 | 3.08 | 1 | .08 | 1.03 | 1.00 | 1.05 |
| Constant | -3.59 | 4.40 | .67 | 1 | .41 | .03 | | |
| Block three | | | | | | | | |
| Type of course | -1.85 | 1.23 | 2.28 | 1 | .13 | .16 | .01 | 1.74 |
| Time in course | -2.11 | 1.27 | 2.74 | 1 | .10 | .12 | .01 | 1.48 |
| Prose literacy | .03 | .02 | 2.37 | 1 | .12 | 1.03 | .99 | 1.08 |
| Emotion-focused | .01 | .06 | .01 | 1 | .92 | 1.01 | .89 | 1.14 |
| Problem-focused | -.06 | .07 | .73 | 1 | .40 | .94 | .82 | 1.08 |
| Constant | -1.19 | 6.18 | .04 | 1 | .85 | .30 | | |
| Block four | | | | | | | | |
| Type of course | -2.88 | 1.82 | 2.51 | 1 | .11 | .06 | .002 | 1.98 |
| Time in course | -2.66 | 1.48 | 3.23 | 1 | .07 | .07 | .004 | 1.27 |
| Prose literacy | .04 | .02 | 3.02 | 1 | .08 | 1.04 | 1.00 | 1.08 |
| Emotion-focused | -.07 | .08 | .86 | 1 | .35 | .93 | .80 | 1.08 |
| Problem-focused | .07 | .09 | .53 | 1 | .47 | 1.07 | .89 | 1.28 |
| Adaptability | -.11 | .07 | 2.43 | 1 | .12 | .90 | .79 | 1.03 |
| Constant | 2.27 | 7.06 | .10 | 1 | .75 | 9.65 | | |

The first model correctly classified 78.0% of cases; however, this was exactly the same as the constant classified alone. The second model correctly classified 90.2% of cases, the third correctly classified 85.4%, and the fourth correctly classified 82.9%. As the second model correctly classified the most cases (12.2% more than the constant alone, and 7.3% more than the model with all variables included), this was considered the optimum model for predicting overall goal achievement. The model as a whole explained between 30.2% (Cox and Snell R

Square) and 46.5% (Nagelkerke R Square) of the variance in overall goal achievement; however, none of the individual predictors was a significant contributor.

The residuals were inspected for the regression following the criteria suggested by Field (2005). Inspection of Cooks Distance, Leverage Values, the Standardised Residuals, and DFBeta scores for each predictor variable including the constant showed several cases of concern, with heightened DFBeta values for the constant and the type of course variable. The analysis also returned enlarged Cooks Distance values for two cases and four heightened standardised residual scores. Revision of the interviewee notes showed no justification for removing the affected cases. However, it is possible that the sample size has heightened the impact of specific cases on the model.

The assumption of multicollinearity was checked through inspection of correlations and the collinearity diagnostics function in SPSS. Field (2005) suggests any correlation above .9 indicates multicollinearity. No combination of IVs was correlated at this level. As an additional check, Belsely, Kuh, and Welsch's (1980, cited in Tabachnick and Fidel, 2007) criteria for judging multicollinearity (as outlined previously) was also used. Using these criteria, the assumption was violated by the relationship between problem-focused coping and emotion-focused coping. These data suggest that the model based on this sample is biased and requires further cases to accurately determine the impact of these factors on post-course goal achievement.

5.7.3 Summary

Hypothesis nine was not supported. High problem-focused coping scores at time two were not associated with post-course goal achievement at six months while low problem-focused coping scores were not associated with non-achievement.

Hypothesis ten was not supported. High emotion-focused coping scores at time two were not associated with non-achievement of post-course goals at six months while low emotion-focused coping scores were not associated with achievement.

Hypothesis eleven was not supported. High adaptability scores at time two were not associated with post-course goal achievement at six months while low adaptability scores were not associated with non-achievement.

Hypothesis twelve was not supported. High prose literacy scores at time two were not associated with post-course goal achievement at six months while low prose literacy scores were not associated with non-achievement. It was interesting to note the significant bivariate correlation between prose literacy score and overall goal achievement (however the directionality of this relationship is unknown).

A model including ‘overall time in the course’, ‘type of course’, and ‘prose literacy score’ as a group significantly predicted overall goal achievement at six months. However, while the model was significant no single variable made a significant individual contribution to the model.

CHAPTER SIX - DISCUSSION

This study explored whether coping with stress in adult learning environments was associated with prose literacy¹⁹ scores. The overarching objective was to determine if different means of coping with stress were associated with literacy in different ways with the implication that these differences would be related to retention factors in further education. This research provides a first exploration of the broad dispositional coping styles and specific coping strategies used by literacy score as a first step towards contributing to the development of an intervention to assist adults with low literacy to experience less stress (or potentially cope with it in more constructive ways) in adult learning environments.

Adults with low literacy levels often report difficulties with learning in formal learning environments such as schools (Berg & Lick, 2001; Murray et al., 2007; Neubauer & Dusewicz, 1988; Tilley et al., 2006; Tilley et al., 2007). So it follows that entering an adult education environment, often for the first time since school days, can be considered threatening and stressful even when the motive to participate is strong.

The means by which these individuals cope with stressors in the course is proposed to partly determine whether they stay in the course, whether they achieve their learning goals, and whether their learning process is optimised. Appraisals of threat and challenge and subsequent coping action tendencies are also proposed to shape schema of learning experiences which will influence future decisions about engaging in further study.

The assumption was made that participating in adult education is beneficial due to the

¹⁹ For further reference, unless otherwise stated, the term 'literacy' throughout this section relates to prose literacy.

enhancement of fundamental and higher-level skills that can be attained, not least of which includes improvement in functional literacy scores (and with enough time, literacy levels). Individuals with moderate to high literacy levels are more likely to be in higher-level employment, receive higher incomes, enjoy better health, enjoy higher socioeconomic status, and are more likely to participate in and have access to further education opportunities (Culligan et al., 2004; OECD, 2000).

The results of the current study are discussed with primary reference to the low literacy group as they were the main focus of the study. Discussion of the high literacy group is used as a point of comparison against which the findings and interpretations associated with the low literacy group are compared.

This chapter begins with a summary of the coping styles and strategies associated with differing literacy scores followed by an interpretation of these findings, leading to a discussion of the potential influencing factors on persistence in this sample. The order in which the results are discussed differs from that presented in the results chapter as the interpretation of the coping styles and strategies section will allow for a more detailed understanding of the persistence factors. Following this, the impact of time on coping style, adaptability, and literacy is summarised and goal achievement outcomes are discussed. The chapter ends with an examination of the implications, limitations, and future research opportunities that could follow on from this study.

6.1 COPING STYLES AND PROSE LITERACY SCORE

6.1.1 Summary

Two key research questions of this study were “Does coping style explain a significant

amount of variance in prose literacy score?” and “Does adaptability explain a significant amount of variance (over and above coping style) in prose literacy score?” Four hypotheses were tested: 1) Increases in problem-focused coping score will be significantly associated with increases in prose literacy score; 2) Increases in emotion-focused coping score will be significantly associated with decreases in prose literacy score; 3) Increases in adaptability score will be significantly associated with increases in prose literacy score; and, 4) Adaptability will explain a significant amount of variance of prose literacy score once the effect of both coping styles is taken into account.

The first hypothesis was supported. At both time points, higher problem-focused coping scores were associated with higher literacy scores. Inspection of the specific problem-focused coping strategies used over time revealed the pattern of use of each strategies differed by literacy level. Most of the differences in the mean frequency of use of particular strategies were small; however, over time for those of high literacy levels there was a moderate increase in the use of ‘planning’ and ‘active coping’, and a decrease in ‘suppression of competing activities’. ‘Use of instrumental social support’ and ‘positive reinterpretation and growth’ showed moderate differences between literacy groups with the highest frequency of use assigned to the high literacy group at both time points. With the exception of ‘suppression of competing activities’, the problem-focused strategies of ‘planning’, ‘active coping’, ‘use of instrumental social support’, ‘restraint’, ‘acceptance’, and ‘positive reinterpretation and growth’ are proposed to be those specific strategies that as they increase (as a group) literacy scores increase also. This finding suggests that those with higher literacy scores are more likely to use these strategies more frequently than those with lower literacy scores in dealing with stressful learning encounters.

The second hypothesis was partly supported. Higher emotion-focused coping scores were associated with lower literacy scores at time two, however, this relationship was not significant

at time one. This difference in findings over time may have been partly due to measurement error, the significant difference between emotion-focused coping average scores at time one and time two (suggesting some impact of the course itself), and/or the influence of a potential moderator of 'type of course' that was included in the time one model. Measurement error may have occurred through the timing of the assessment. The first assessments were undertaken near to or at the beginning of a participant's course. Participants therefore referenced earlier learning environments apart from their current situation to come to an understanding of their general means of coping with stress in learning environments. The second assessments were undertaken at the end of the current course and participants were asked to reference their general ways of coping with stress from within the current learning environment. These differing reference points may at least partly explain the difference between the two models as perhaps when reflecting back on incidences from the past the attempts made to actively fix the problem are more prominent, than if the participant were reflecting on incidences from recent memory or experience. Further, type of course was significantly associated with higher prose literacy scores at time one. As outlined in the results, it is not unexpected that those beginning at Polytechnic or University courses would overall have higher levels of prose literacy than those who undertake courses at local PTEs. However, it appears as individuals take part in the course (i.e., from time one to time two) prose literacy scores significantly increased, potentially removing the impact on prose literacy score of type of course.

Inspection of the particular emotion-focused coping strategies used over time showed that individuals with low literacy scores showed more frequent use of the avoidance strategies 'denial', 'turning to religion', and 'behavioural disengagement'. Interestingly, 'focus on and venting of emotions' showed similar use across the two literacy levels, while 'use of emotional social support' was more frequently used by those of high literacy levels than those with low. Participants with high literacy levels were more likely to make more use of social support strategies of any type on average.

The third and fourth hypotheses were not supported. High adaptability scores were not associated with increases in literacy scores at either time point and adaptability was not a significant contributor to explaining the variance in prose literacy score after the effects of the two coping styles were taken into account. This result, combined with a finding of a large correlation between adaptability and problem-focused coping, implies that any association between literacy and adaptability is likely explained through the similar variance shared by the problem-focused coping strategies.

6.1.2 Discussion

The results of the current study suggest that individuals with low literacy scores are just as adaptable as individuals with higher literacy scores. Where participants differ in the current study is in the frequency of use of problem-focused coping strategies and the frequency and type of use of emotion-focused strategies. Respondents with lower literacy scores were more likely to make use of emotion-focused avoidance strategies, to make less use of instrumental or emotional social support, and to make less use of problem-focused strategies generally than those with higher literacy scores. The present study's findings suggest that literacy level may influence the choice of coping style in adult educational environments. Of course, it must be emphasised that literacy level is only one of a multitude of factors that can impact on the choice of coping styles and strategies.

6.1.3 Efficacy of coping styles and strategies

As denial, turning to religion, and behavioural disengagement were the emotion-focused strategies that showed the most difference in use between the two literacy groups (with the exception of use of emotional social support, which will be discussed later), their definitions will be reiterated here. As with all coping strategies, these can be considered adaptive or

maladaptive dependent only on their function and outcomes. However, in general, disengagement responses such as these often negatively affect adaptive means of coping (Aldwin & Revenson, 1987), particularly if the disengagement response is maintained over the long-term (Suls & Fletcher, 1985). Denial in the COPE scale referred to the refusal to believe the stressor existed, or trying to act as if the stressor was not real (Carver et al., 1989). Turning to religion in times of stress could be viewed as a means of seeking emotional support or as a vehicle for positive reappraisal (Carver et al., 1989). It could also be seen as a form of disengagement as when an individual removes themselves from directly addressing a stressor thereby placing the outcome “in God’s hands”. Behavioural disengagement referred to the reduction of effort in dealing with the stressor even to the point of giving up goals with which the stressor was interfering (Carver et al., 1989). Of particular interest to this discussion, Carver et al. (1989) point out that behavioural disengagement is most likely to occur when poor coping outcomes are expected and in instances of helplessness. Burker et al. (2005) have outlined that behavioural disengagement is positively correlated with psychological distress outcomes, and suggest that strategies such as this and denial may serve as markers of emotional distress. Use of these two dispositional strategies in the present study could imply that those with lower literacy generally experience higher levels of negative affect or psychological distress than those with higher literacy in response to educational stressors. This could invoke attention to emotions and, either in concert or at different times or situations, attempted disengagement from those emotions via disengagement with the stressor. Those with higher literacy scores may pay the same attention to emotions, and express those emotions to the same level (as seen by similar scores on the focus and venting of emotions subscale), but would tend to actively address the stressor rather than disengaging from it.

Problem-focused strategies of coping have generally been found to imply more adaptation and lower levels of psychological distress as an outcome (Lazarus & Folkman, 1984). While it is acknowledged that the categorisation of problem-focused and emotion-focused coping into

adaptive or maladaptive strategies is misleading and too simplistic a design (for a discussion of this and the factors associated with judging a coping strategy as adaptive or maladaptive see Skinner et al., 2003), the strong correlation between problem-focused coping and adaptability at both time points suggests that problem-focused coping as used by the present sample is reminiscent of strategies that promote flexibility and openness to change. Emotion-focused coping, however, is negatively correlated with adaptability at both time points (although this is only significant at time one).

In the process of approaching stress in a learning environment both emotion-focused and problem-focused coping approaches are used in every encounter (Lazarus & Folkman, 1984). Situational constraints must be taken into account when evaluating the efficacy and use of emotion-focused and problem-focused coping strategies, as sometimes there may be few options for the use of one of these approaches (Lazarus & Folkman, 1984). It does not necessarily follow, therefore, that the use of emotion-focused strategies in any situation is inherently maladaptive (Lazarus & Folkman, 1984). Within this sample, however, given the predominance of emotion-focused coping as an indicator of lower literacy score and a lack of persistence, along with its negative relationship with adaptability, it is suggested that emotion-focused strategies are generally not as adaptive in educational environments as problem-focused strategies. Avoidance used only in moderation, however, may be beneficial for improvement of coping with stress for low literacy individuals in adult vocational environments if problem-focused strategies are used in concert. However, enhanced use of problem-focused strategies across the board, combined with a decrease in avoidance strategies and including the more frequent use of both instrumental and emotional forms of social support, could enhance persistence and may decrease psychological distress outcomes in response to educational stress.

While generally, emotion-focused strategies have been linked to outcomes of distress and negative affect (Carver et al., 1989; Lazarus, 1966; Lazarus & Folkman, 1984; Zautra et al.,

1996), they can also be beneficial, particularly when used initially (Suls & Fletcher, 1985) perhaps in preparation for a problem-focused approach. It must be remembered that individuals of high literacy in this study also used emotion-focused coping strategies when dealing with stress, just to a lesser degree with regard to avoidance strategies. It is possible that avoidance coping strategies were used more frequently at the beginning of stressful encounters by individuals with lower literacy scores, but were replaced by problem-focused coping strategies once the purpose of the emotion-focused strategies had been reached. A typical example of this type of coping approach was given in several of the interviews where participants discussed removing themselves from the situation (behavioural disengagement) for a while to “clear their head” before returning to the task at hand. Overall this approach could be considered adaptive in the instance that it resulted in successful resolution of the initial threat or challenge. However, it would also appear from the current study’s data that even if emotion-focused strategies are only being used initially as an escape followed by engagement in problem-focused efforts, individuals with lower literacy scores do not use problem-focused strategies to the same degree as their higher literacy counterparts.

6.1.4 Avoidance and low literacy

While the specific function of the use of emotion-focused strategies in adult educational environments is not known, research has shown that individuals with low literacy do tend to engage in emotion-focused coping strategies (particularly avoidance) in other aspects of life, particularly with reference to reading or writing tasks (Becker et al., 1982; Eberle & Robinson, 1980; Ross, 1987). Studies have shown that individuals with low literacy generally have a large repertoire of avoidance strategies for dealing with situations requiring literacy. For example, instead of learning how to approach a literacy task themselves they will seek the assistance of others with writing or reading (instrumental social support), avoid jobs that require high levels of literacy skills, and avoid situations where literacy skills will be needed (Eberle & Robinson,

1980). It should be noted that these are strategies used by individuals in their wider life and not necessarily by participants in an educational course where options for avoiding through engaging others to do reading and writing tasks for them may not be available. However, the example shows that avoidance strategies could be a habitual means of coping with tasks that involve literacy demands for those with lower literacy levels.

Frederickson and Dewe (1996) have argued that avoidance approaches may be a general primary response when threat is appraised. These authors found that the importance of the resolution of the stressor can lead to the engagement in approach or problem-focused behaviours. This focus on importance may explain why individuals with low literacy levels whose typical means of responding to literacy tasks involve avoidance still engage frequently in problem-focused coping strategies when dealing with stress in educational environments.

If individuals with low literacy levels are more likely to avoid tasks or environments where these skills will be needed, why is it that some choose to undertake courses at PTEs, Polytechnics, or Universities? It has been shown that individuals with low literacy skills often self-report no issues with reading and writing, or report their levels of proficiency as higher than they actually are (Neubauer & Dusewicz, 1988; OECD, 2000). This may reflect the contexts within which low literacy individuals generally associate themselves (where high levels of literacy skills are avoided or not needed) (Eberle & Robinson, 1980), or it may involve a genuine belief that their literacy skills are sufficient for their purposes (OECD, 2000). To those that do not wish to be involved in employment or tasks which involve higher literacy skills, the need to enhance these skills is low or nonexistent. However, as many adult literacy learners have stated (Tilley et al., 2006; Tilley et al., 2007), the need for qualifications for nearly all forms of employment, the need to read to and teach their children, and the general need to improve oneself for personal growth, lead some to take up adult education. The motives for engagement could outweigh the motive to disengage, at least initially.

Even so, Lytle et al. (1986) have shown that those with low literacy levels will generally avoid literacy tasks within the courses where they have come to learn such tasks. This suggests a level of predisposition towards the use of emotion-focused or avoidance strategies. In the case of denial of low literacy skills, the experience of not understanding or being unable to interact with the materials in an adult course could lead to threat and the associated response of the individual denying the relevance of that material, thereby falling back on emotion-focused avoidance strategies. Denial may in this case serve the function of maintaining self-esteem. A second example would be in the case of those that are aware of their literacy needs and still avoid such tasks focused on improving these skills in the classroom. The avoidance strategies that have for so long protected the individual against stigma, rejection, and embarrassment automatically may come into play (Thomae, 1987) causing a conflict of motives for the student (Lazarus, 1966), which in turn could engender more stress.

The studies referenced in the preceding discussion with regard to the link between low literacy levels and avoidance strategies are largely drawn from research with students within specialist adult literacy programmes. In the present study, participants were students in an adult vocational course of which literacy support was either offered as an integrated component or offered outside the classroom environment. Within the present study's educational environment, the pressures on participants may be different as the focus is not only on developing literacy skills, but also on developing a skill set relevant to a particular vocation. This extra focus could introduce an extra stressor of a larger range of skills needed to function in the course when foundational skills such as functional literacy are low and need to be strengthened before higher-level tasks can be undertaken. These 'extra' stressors and how they are managed in terms of coping with the threat has far reaching impacts for persistence and further study goals.

6.1.5 Negative self-schema

Often people of low literacy levels have negative self-views about their capabilities as learners (Eberle & Robinson, 1980; Lytle et al., 1986; Neubauer & Dusewicz, 1988; Tilley et al., 2006; Tilley et al., 2007). Individuals with low literacy frequently report formal school experiences as stressful, threatening times in their lives where they felt marginalised and stupid (Eberle & Robinson, 1980; Lytle et al., 1986; Neubauer & Dusewicz, 1988; Tilley et al., 2006; Tilley et al., 2007). These prior experiences of learning are proposed to develop into a schema of learning which in turn impacts on subsequent adult educational experiences. All individuals of differing literacy levels will hold schema for learning. Of particular importance here, Beck (1967) discusses that a self-schema held by an individual can give rise to a predominance of either positive or negative beliefs in ability or capacity to cope. Where positive or neutral schema of school or previous learning environments are held with the self positioned in that schema as a capable learner, educational environments should not seem overly threatening and potential stressful stimuli may be appraised in a positive (challenging) or neutral way (Beck, 1967). However, as noted by Thompson and Gaudreau (2008), if self-schema do not include understandings of the self as a capable learner, emotion-focused coping strategies particularly avoidance-focused strategies (and potentially threat rather than challenge appraisals) will predominate in learning environments. Avoidance strategies in particular have been commonly found when the individual judges a situation to be out of their control or unable to be changed (Folkman et al., 1986).

Often individuals are unaware of the extent of their negative schemata (Epstein, 1992). In Epstein's (1992) cognitive-experiential self theory (CEST), the argument is made for a self-view that can be an irrational construct, built from life experiences. With specific regard to learning experiences, it can be expected, given the literature on past negative learning experiences of adult basic education students (Eberle & Robinson, 1980; Lytle et al., 1986;

Neubauer & Dusewicz, 1988; Tilley et al., 2006; Tilley et al., 2007), that formal educational environments will have negative connotations for a number of (if not all) individuals with low literacy levels. Epstein (1992) argues that negative self-views can be overgeneralised from one situation to the next. This would mean that low literacy individuals would enter an adult educational environment with low expectations of success and the perhaps unconscious predisposition to avoid or minimise any failure (Epstein, 1992; Carver & Scheier, 1981).

Interestingly, individuals with low literacy who enrol in adult vocational courses generally have high aspirations for their future employment and education (Neubauer & Dusewicz, 1988). This suggests that this group does not develop negative self-schema to the extent that they avoid participating altogether. However, their past experiences and the level of awareness they have of the impact of these experiences, will likely interact to make any indication of failure or rejection at the course act as a higher stressor to those of low literacy levels than those of high literacy levels. As an example, when under stress, children who had low confidence and a subsequent negative perception of ability, were likely to view the task as a threat and avoidance of the task would subsequently result, while those that had higher levels of confidence in their ability viewed the task as a challenge and subsequent task-focused strategies resulted (Dweck, 1986). Similar conclusions are suggested with regard to this study's sample. A lack of confidence in the ability to learn by individuals with low literacy scores could result in more use of avoidance techniques than that seen in individuals with higher literacy scores as a means to avoid further harm to self-esteem and confidence.

6.1.6 Threat and challenge

The difference between primary appraisal of threat and primary appraisal of challenge is an interesting one. Lazarus & Folkman (1984) argue that the same stressor can elicit different appraisals in different people based on the interpretation or meaning placed upon that stressful

stimulus. Individuals who appraise a stressor such as an upcoming assignment as a challenge will be more likely to use problem-focused strategies in constructive ways to approach the stressor and will experience positive affect (Lazarus & Folkman, 1984). When a stressor is appraised as a threat, however, the individual is more likely to experience feelings of anxiety (followed by the affect associated with the secondary appraisal process coping action tendency) (Lazarus & Folkman, 1984). Secondary appraisal affects can take both positive and negative forms and Carver and Scheier (1990) argue that positive and negative affects can be felt at the same time about different aspects of a goal or stimulus. However, in the case of the threatening aspects of a stimulus, affects are likely to be negative, with attack associated with anger, fear with avoidance etc. (Lazarus, 1966). Of relevance to those of low literacy levels with negative past experiences of education, Carver and Scheier (1990) note that negative affect associated with similar memories of a currently appraised situation will make negatively-toned information more accessible to the individual.

It may be more likely that individuals with higher literacy scores who do not share the same negative self-schema with regard to education will appraise a stressor as a challenge whereas those with lower literacy scores (and a negative self-schema for learning) may appraise the same stressor as a threat. Support for this hypothesis is seen in the heightened use of emotion-focused avoidance strategies by the low literacy group (compared to the high literacy group) suggesting that more threat (and therefore perhaps more negative affect) may be felt by this group, given their need to disengage. Those of higher literacy levels do show a similar use of focus on and venting of emotions combined with a heightened use of emotional social support. This suggests that while the higher literacy group do engage in emotion-focused strategies, they do so in concert with heightened problem-focused strategies. This further implies that the emotion-focused strategies assist these participants in actively addressing the problem and potentially reframing it as a challenge (positive reinterpretation and growth was also used more frequently by those of higher literacy levels). However, those of low literacy levels use the emotion-

focused strategy of use of emotional social support less often, tend to disengage from the stressor, and use less frequent problem-focused strategies in comparison to the high literacy group. This implies a level of helplessness with regard to the stressor, further implying a condition of threat as opposed to challenge. Support for this premise is given by Lazarus and Folkman (1984) who refer to hierarchical models of coping when discussing that “[t]he greater the threat, the more primitive, desperate, or regressive emotion-focused forms of coping tend to be and the more limited the range of problem-focused forms of coping” (p. 168). This effect is proposed to be the result of reduced cognitive functioning under high threat, limiting access to problem-focused resources (Lazarus & Folkman, 1984).

While it is by no means certain that the affects being addressed in response to a stressor by the low literacy individuals are negative emotions, their previous negative experiences with formal learning environments, combined with their self-reported lack of confidence and self-esteem when joining the course (in this study as well as others), provide support for the notion that learning experiences appraised as stressful will be more threatening to the attainment of their aspired-to goals and result in negative affect (more than positive) when compared to those of higher literacy (whose previous experiences in formal learning environments has not been generally similar)²⁰.

Of interest, Carver and Scheier (1981) have argued that where both threat and challenge are present in a situation (such as in an educational environment), the focus of the individual, as to whether they are focused on a reduction of the threat or mastery of the challenge, will impact on appraisal and coping behaviour. If, as Frederickson and Dewe (1996) suggested, avoidance is a primary default in times of high stress, given what is known about low literacy individuals, it may be that the focus of this group will be habitually on avoidance of a threat rather than

²⁰ As derived from the transcripts associated with each interview.

reinterpretation of the stressor into one of challenge. The idea of level of harm is also pertinent here. Individuals with low literacy levels may equate higher levels of harm with educational threats than high literacy individuals due to differential experiences of school.

A further explanation as to the potential differential appraisal of threat and challenge by low and high literacy individuals relates to the ambiguity of the stressor. Individuals with higher literacy levels in general have higher educational achievements (Culligan et al., 2004; OECD, 2000), suggesting a higher level of familiarity with formal learning environments and tasks. This combined with increased confidence in such arenas amongst the high literacy group could result in more familiarity with educational stressors and higher understanding of the approaches needed to address such stressors. This in turn may make it easier for the high literacy group to appraise some educational stressors as challenges rather than threats (and in turn focus on the problem-focused strategies needed to address the stressor).

6.1.7 Affect and coping response

It is generally assumed in some of the literature (and has briefly been outlined above), that avoidance coping strategies could be a sometimes useful precursor to problem-focused coping strategies (see Suls & Fletcher, 1985). This is not always the case. Especially in the instance of dispositional measurement of coping styles and strategies, it is unknown at what stage of any specific coping process an individual is using each of the strategies or styles reported (Folkman & Lazarus, 1980, 1985; Folkman et al., 1986). In the results presented here, the tendency to more frequently use emotion-focused avoidance strategies among those in the low literacy group may be something that happens as a result of attempts at problem-focused approaches. For example, the use of problem-focused approaches by individuals with low literacy levels (with some strategies used at nearly the same frequency as those at higher literacy levels) may not be as effective as they are for their higher literacy counterparts. This in turn could lead to

negative affect and a focus on the emotional regulation aspects of dealing with stress. While those of high literacy also engage in these avoidance behaviours they do not do so to the same degree, suggesting a lower level of negative affect or a higher level of positive and neutral experiences in response to educational stress within this group.

6.1.8 Self-focus

As noted in the literature review, self-focus is defined as the “extent to which attention is predominantly directed toward the self as opposed to external events or internal thoughts unrelated to the self” (Matthews & Wells, 1996, p. 578). An individual with high self-focus pays increased attention to internal emotional states and therefore is hypothesised to be predisposed toward emotion-focused coping strategies, due to high levels of awareness of emotion and the individual’s need to reduce the threat by regulating the emotional reaction (Matthews & Wells, 1996).

Low literacy individuals in the current study showed a predisposition to emotion-focused avoidance coping responses (which can either be a learned response to stress or an indication of high stress) suggesting an increased attendance to emotional responses over and above high literacy individuals. Notably, the emotion-focused strategy ‘focus on and venting of emotions’ was used by both groups at very similar levels. This may be because both groups are aware of their emotional response particularly when feeling ‘upset’ or ‘distressed’ as is stated in three of the four items of the ‘focus on and venting of emotions’ subscale. However, the attention given to these emotions over the process of coping with a stressor could potentially differ between the two groups. This last thought, though, is speculative and would need to be assessed through further research.

In the case of emotional increase as opposed to or before regulation attempts, it is possible

that heightened emotional states could act as evidence to the individual experiencing them of an inability to cope with educational stressors and therefore a strengthening of the negative self-schema for learning. This 'realisation' in turn could lead to increased avoidance of educational experiences so as to avoid failure and negative affect. Interestingly, Scheier et al. (1981) found that self-focused individuals are generally more likely to engage in avoidance behaviours following a threat appraisal. As outlined previously, it is possible that while those of high literacy levels show similar levels of focus on and venting of emotions, this is a strategy that serves a short-term purpose eventually leading to problem-focused strategies, while for the low literacy group, emotion-focused avoidance strategies are likely to be more frequently used in concert.

A self-regulated individual is motivated to reduce any perceived discrepancy between the individual and the ideal standard they aspire to be (Matthews & Wells, 1996). This can have beneficial effects in terms of up-skilling as a self-regulated individual will likely take steps to achieve their up-skilling goals. However, if attainment of these goals is threatened, negative affect can result and behavioural and mental disengagement (avoidance strategies commonly aligned with emotion-focused coping) could be seen along with a reduction in problem-focused coping strategies (Carver & Scheier, 1981). If an individual is already predisposed to viewing themselves as a learner or their learning capacity in a negative light, threat to the attainment of educational goals could potentially enhance negative self-schema and attentional biases, resulting in further threat and stress and associated negative affect.

Matthews and Wells (1996) and Carver and Scheier (1988) argue that self-focus should increase problem-focused coping when reduction of the perceived discrepancy between self and the behavioural standard is likely to be successful; when discrepancy reduction is considered unlikely, behavioural and mental disengagement should be seen along with a reduction in problem-focused coping strategies. High self-focus combined with low confidence should show

a dispositional pattern of avoidance and emotion-focused coping strategies in times of stress, even in situations where there are opportunities to undertake problem-focused approaches (Matthews & Wells, 1996). Heppner et al. (2004) have shown that individuals with negative perceptions of their problem-solving abilities lacked persistence in problem-solving, were less motivated to approach the problem, avoided the problem, felt powerless in dealing with some stressors, and tended to act impulsively. If persons of low literacy tend towards high levels of self-focus and if it is accepted that personal educational histories will tend toward a negative schema of self in terms of learning and educational problem-solving capacity, this group should be more susceptible to certain things. For example, they should be more susceptible to stress in learning situations, more likely to appraise threat rather than challenge, more likely to be focused on the emotional regulation of the stress response, and more likely than the high literacy group to use emotion-focused and avoidance coping strategies in response to the stressor. The results of this study indicate support for these hypotheses.

It is also possible in theory that the self-focus process could result in a maladaptive focus on emotions to the point where problem-focused approaches are blocked from use as attentional capacity is diverted elsewhere (Matthews & Wells, 1996). The diversion of attentional capacity to emotion-focused strategies is indicated to be stronger in those of low literacy (as indicated by their less frequent use overall (compared to those of high literacy) of problem-focused strategies and their heightened use of emotion-focused avoidance strategies), suggesting that this group may take longer to respond in a problem-focused way to the stressor than the high literacy group. This in turn could further exacerbate stress if others are seen to be approaching and working on the stressor (for example, an assignment or work placement materials) when the individual in question has not been, or is currently unable to. The likelihood of falling back on default previously-reinforced coping strategies in times of high stress in particular learning situations is a possibility with low literacy participants (and indeed any person) who are more likely to default to avoidance and emotion-focused strategies (see Thomaes, 1987 for a

discussion of consistency of coping responses) before they can begin to use (or to replace failed efforts at) problem-focused strategies. In a related point, Carver and Scheier (1981) claim that avoidance coping strategies may be used more often by those with high self-focus as the resource demands they place on the individual are perceived as lower than the demands that could be placed by problem-focused strategies. This point is relevant for those of low literacy for whom avoidance coping strategies with regard to educational stressors possibly take fewer resources and are perceived as less risk than the task-focused option.

Kanfer and Stevenson (1985) found self-focused individuals showed impaired learning performance and lower rates of persistence in completing tasks than non-self-focused individuals. These authors claimed that the predominance of emotion-focused coping required through self-regulation processes influenced by high self-focus, impaired the ability to engage in problem-focused coping strategies (Kanfer & Stevenson, 1985). Low literacy individuals in the current study did overall have lower rates of persistence (see persistence below) and higher rates of use of emotion-focused coping strategies than high literacy participants. Participants who did not persist were also likely to have higher emotion-focused coping style scores than the persisters. Participants with lower literacy scores did make use of problem-focused strategies, but, the efficacy of use of these strategies is open to question. It is the opinion of Matthews and Wells (1996) that a high self-focus individual may still engage in problem-focused strategies to move toward a goal. However, as outlined above, the attentional capacity of this individual will be less than optimal (considering its hypothesised split between emotional regulation and task-focus) resulting in a higher likelihood that the problem-focused strategies will not be implemented as effectively as they might have been given a lower tendency for self-focus. Matthews and Wells (1996) advocate a general negative association between self-focus and problem-focused coping.

Notably, much of the work on self-focus has been done with clinical samples. Matthews and

Wells (1996) claim that in non-clinical samples, self-focus may not necessarily be detrimental or be found to be so overtly negative in coping with everyday threats and stressors. This point can be seen as supportive of the argument for a heightened level of self-focus and negative self-schema influencing the heightened use of emotion-focused avoidance coping in low literacy individuals, without the complete loss of problem-focused coping abilities. As the low literacy individuals in this study appeared to have the use of the same problem-focused strategies at their disposal as their high literacy peers, it is important for vocational programmes to build on these strengths. Ross (1987) argues that using the strengths of low literacy individuals to build self-esteem in learning environments is integral and can help buffer negative messages about the self that may come from continuing challenging educational tasks. Further discussion of this point is provided under the 'Implications' section of this thesis.

6.2 PERSISTENCE

6.2.1 Summary

Persistence in the course was defined as the participant staying in the course until the end date. The participant did not have to pass the course to be considered as persisting. The results of the analyses of persistence are descriptive only as the sample size of the non-persisting group was small. The research questions and hypotheses were rephrased before analysis took place to reflect the descriptive statistical techniques that would have to be used. The small number of non-persisters may have been due to sample selection processes, where those who were more likely to offer to take part in a longitudinal study could have also been those who were more likely to persist over the duration of their course. The research question, associated hypotheses and results are summarised below.

The research question "Is coping style, adaptability, or prose literacy score associated with

persistence in the course? included four hypotheses: 1) Participants who persist in the course will have higher problem-focused coping scores on average than those that do not persist; 2) Participants who persist in the course will have lower emotion-focused coping scores on average than those that do not persist; 3) Participants who persist in the course will have higher adaptability scores on average than those that do not persist; 4) Participants who persist in the course will have higher prose literacy scores on average than those that do not persist.

Hypotheses one and three were not supported. Participants who persisted in the course did not differ from non-persisters in problem-focused coping or adaptability scores at either time point. This may be due to both groups using similar amounts of problem-focused coping as they are motivated to engage with the course, but perhaps at differing levels of efficiency. Further research is needed to test this potential interpretation.

Hypothesis two was supported. Participants who persisted in the course had significantly lower emotion-focused coping scores than those that did not persist at both time points. Emotion-focused coping was an indicator of non-persistence (just as it was an indicator of low literacy level at time two in the multiple regression). These results have been interpreted in the preceding discussion section as further evidence of the tendency for emotion-focused coping strategy use to be maladaptive if the goal is to remain in the course.

Hypothesis four was partially supported. At time one, there was no difference in the average literacy score for persisters and non-persisters. However, at time two, participants who persisted in the course showed higher literacy scores on average than those who did not persist. This result, combined with the finding that literacy scores increased significantly from time one to time two (outlined in more detail under 'changes over time' below) suggest that those who spend longer in the course (or persist) benefit from an increase in literacy score. This may be attributable to the increase in time spent undertaking literacy tasks. However, subsequent tests

showed no significant difference in the median amount of time spent in the course by persisters and non-persisters, suggesting a third unknown factor may be responsible for the increase in literacy levels. It is possible that those who persisted may have engaged in more of the educational tasks during the same time than those who chose not to persist.

These findings are supportive of the interpretation given in the preceding section with regard to the adaptive potential of problem-focused and emotion-focused strategies in the relationship of literacy and persistence. It appears that engagement in an adult educational course can (if engaged through to the end and undertaking the opportunities afforded) result in enhanced overall literacy scores from those held upon entering, as well as decreased reliance on emotion-focused coping strategies.

It is also of interest that even though low literacy individuals were found in this study to be more likely to use emotion-focused avoidance strategies and less use of problem-focused strategies than the high literacy group, a subsample of this group did choose to persist until the end of the course. This implies that the tendency to avoid stressful educational stimuli was not as strong a motive as the motive to continue engaging in the programme for some. An alternative explanation may be that, for some, the avoidance strategies used allowed for a removal of the self from experiencing stress (Krohne, 1993) to the degree that the individual was able to continue with the programme. This latter explanation however would require, in Krohne's (1993) conceptualisation, a person high in cognitive-avoidance and low in vigilance (a repressive coping style), in other words a heightened avoidance style combined with a lack of awareness of environmental threat cues (Krohne, 1993). It is argued above that individuals of low literacy levels are very aware of threats in an educational environment and act to avoid the anticipated agent of harm. Therefore, the current author advocates an explanation of conflicting motives more so than the low literacy individual persisting due to a low level of stress.

Conflict of motives is also implied in the processing efficiency theory of Eysenck and Calvo (1992). The processing efficiency theory holds that in times of high anxiety and threat, an individual will either cope directly (usually avoidance techniques) or will engage in more cognitive processing efforts to enhance the likelihood of success with task performance (Eysenck & Calvo, 1992). In the current study, low literacy scores were associated with non-persistence, which could be interpreted to mean that some participants chose to avoid the course altogether. The majority, however, did maintain their persistence through to the end. If it is accepted that with lower literacy levels these individuals would have felt higher anxiety levels or engaged in more threat appraisals than their higher literacy counterparts, the processing efficiency approach argues that for the lower literacy group, maintaining task performance would have required greater effort and would be associated with greater self-perceptions of worry than for other participants. Thus, while the majority of participants in this study did persist until the end, it does not necessarily follow that the participants were not threatened by the evaluative situation of a programme of study.

6.3 CHANGES OVER TIME

6.3.1 Summary

One research question was asked with regard to changes over time: “Do coping styles, adaptational strategies, or prose literacy scores change over time?” Emotion-focused coping and adaptability decreased significantly over time, prose literacy score increased significantly over time, and problem-focused coping score did not differ over time. This latter finding supports the proposition of Lazarus (1966) and Lazarus and Folkman (1984) that coping styles or dispositions should be stable across time, while the former finding for emotion-focused coping supports the proposition of Krohne (1993) that stability does not mean static. However, if enhancement of frequency of use of problem-focused strategies or the efficiency of these

strategies is to be enhanced, it appears that this is not occurring in the time the participant is in the course. Of interest, emotion-focused coping strategy use has decreased, but less use of these strategies has not been replaced by more frequent use of problem-focused strategies.

Emotion-focused coping scores decreased significantly from time one to time two. Inspection of the specific emotion-focused coping strategies showed a decrease in ‘denial’ and ‘behavioural disengagement’ by the low literacy group from time one to time two. All other strategies maintained a similar frequency of use across the two time points. Therefore, this finding should not be interpreted as a decrease in emotion-focused coping strategies as a whole over time as it appears to be related to two strategies only. Lazarus’s (1966), Lazarus and Folkman’s (1984), and Krohne’s (1993) propositions that coping styles remain stable (not static) across time are supported by this finding.

Coping styles and strategies are argued to be amenable to change (see the following articles for discussions of the trait and situational debate and stable versus static dispositions - Ben-Porath & Tellegen, 1990; Costa & McCrae, 1990; Krohne, 1993). This hypothesis is predicated by the development of coping dispositions based on learned behaviour and self-schema. While particularly entrenched coping dispositions may be difficult to alter, change is considered possible. In fact, stress management workshops and psychotherapy sessions focused on coping and stress are predicated on the ability of an individual to alter their forms of responding to their environment and apply alternative behaviours and cognitions when previous learned responses are no longer adaptive or beneficial (see the ‘implications’ section below).

Adaptability scores also decreased significantly from time one to time two. This result suggests that over time the sample as a whole became less flexible and less open to change in general. In relation to coping response, flexibility can be both adaptive in the case of allowing alternative and more appropriate coping strategies to be used in times of stress (Mattlin et al.,

1990), or maladaptive when flexibility breeds less commitment to a way of responding under conditions of stress (Carver et al., 1993). It is possible that while the results from this adaptability subscale relate to the individual's life in general, they also relate to participation in the course and coping style. A decrease in adaptability may imply increased automatising of response to stress at the end of the course than at the beginning. This would imply high levels of stress (Thomae, 1987). More stress at the end of the course is likely given exams and further life decisions post-course that would have been under consideration at the time of assessment.

Prose literacy scores increased significantly from time one to time two. It is important to point out that this is a change in literacy score not a change in literacy level. As briefly discussed previously, participants' literacy scores fall within a range of capability. For example, a participant may have a score of 320 with a standard error of 20. This means that the participants' true score could be found anywhere between 300 and 340 (20 points either side of the observed score). Hence, a change from 320 at time one to 335 at time two might be considered a significant increase, but it would still be within the original true score range of the individual.

With regard to changes in literacy score (and taking the ranges into account), nearly a third of respondents showed a change in prose literacy score over time. It is possible that the length of time between the first and second assessment was not long enough to produce a change in literacy score for the majority of the sample. An average of 100 hours focused literacy instruction has been purported to be needed for an increase of one U.S. school grade level in reading (Comings, Sum, & Uvin, 2000; Darkenwald, 1986; Rose & Wright, 2006). Therefore, change in literacy score over time may be dependent on not only a specialised literacy focus within a course but also a course that is long enough to incorporate on average 100 hours of focused prose literacy instruction. The majority of the courses in this study were approximately 3 to 12 months in length and either involved literacy instruction as an integrated component in

the vocational course or provided outside assistance with literacy needs as and when required.

6.4 GOAL ACHIEVEMENT

6.4.1 Summary

Goal achievement was explored six-months post course to determine if coping styles, adaptability, and literacy score could predict overall goal achievement. The research question was “Are coping styles, prose literacy score, and/or adaptational responses associated with achievement of post-course goals? Four hypotheses were developed: 1) High problem-focused coping scores at time two will be associated with post-course goal achievement at six months while low problem-focused coping scores will be associated with non-achievement; 2) High emotion-focused coping scores at time two will be associated with non-achievement of post-course goals at six months while low emotion-focused coping scores will be associated with achievement; 3) High adaptability scores at time two will be associated with post-course goal achievement at six months while low adaptability scores will be associated with non-achievement; and, 4) High prose literacy levels at time two will be associated with post-course goal achievement at six months while low prose literacy levels will be associated with non-achievement. None of these hypotheses were supported.

Overall goal achievement was not significantly associated with coping style, adaptability, or literacy score separately. However, a model including ‘overall time in the course’, ‘type of course’, and ‘prose literacy score’ as a group was significantly associated with overall goal achievement at six months. The individual contributions of each variable were not significant at the multivariate level, but, bivariate, prose literacy score was significantly associated with overall post-course goal achievement. This suggests that a relationship does exist between these two constructs; however, a larger sample size is needed to determine the nature of this

relationship.

A number of different factors outside the course will impact on the decision to retain movement toward a goal or to cease striving toward a goal. Particularly with reference to employment goals, achievement is not just dependent on an individual's actions, but it is also dependent on the current social environment. While prose literacy level may indeed impact on the attainment of post-course goals (particularly where employment aspirations exceed literacy capabilities) a range of other socio-economic factors needs to be taken into account in an analysis that seeks to explore this relationship further.

6.5 IMPLICATIONS

This research has shown that individuals with low literacy do not use problem-focused coping strategies at the same frequency as those of higher literacy. However, individuals with low literacy engage in more frequent use of emotion-focused coping strategies, particularly denial, behavioural disengagement, and turning to religion in response to stress in educational environments. More use of emotion-focused strategies has been linked to not only low literacy levels, but also non-persistence in the course. It is argued that the increased use of emotion-focused strategies enhances negative self-schema for learning, making the overall educational experience more stressful than necessary, and encourages a focus on negative affect. High literacy individuals are generally associated with a host of beneficial outcomes including (it is argued) less stress in educational environments, and wider benefits such as increased employment rates, better health, and higher income (OECD, 2000). Therefore, developing a similar pattern of coping with stress in learning environments within low literacy individuals could reduce the stress inherent in this activity, enhance enjoyment of the learning experience, and perhaps lead to further up-skilling and realisation of educational potential. While dispositional coping styles and strategies are proposed to be stable entities by Lazarus (1966)

and Lazarus and Folkman (1984), it has been argued by others (for example, Krohne, 1993) that the dispositional approach is stable, but not static. Krohne (1993) argues that general coping approaches are open to change, but such approaches can change in stable predictable ways (or unstable ways in the case of a breakdown of a system). Indeed, a further examination of the transactional model of Lazarus (1966) and Lazarus and Folkman (1984), combined with the control-theory of self-regulation (Carver & Scheier, 1981, 2000), shows a basis for development of coping approaches on past learning experiences. This suggests that future learning experiences can also in turn shape coping styles and strategies. In particular, it should be possible to shape coping approaches in predictable ways given targeted training.

To achieve this, it is proposed that a coping with stress module or programme needs to be included either in the course or as a precursor to vocational courses that builds on and extends the strengths that low literacy individuals already have. This would primarily involve a reiteration of the problem-focused skills they already have and methods to reduce emotion-focused predispositions of responding to stress (the latter of which may already be a benefit of persistence in courses). Specifically a programme of this type would need to involve cognitive work tapping into self-schema, development of critical self-understanding, and also development of alternative methods of accepting emotions in an active sense rather than focusing on them in a ruminative sense (Nakamura & Orth, 2005). Ross (1987) suggests that the involvement of family and friends in a supportive role may also help to assist in the development of alternative coping strategies for those of low literacy. Interestingly, individuals with lower literacy scores were less likely to use social support mechanisms when under stress in learning environments than those with higher literacy scores.

Currently, some vocational courses do offer stress management modules within their programmes that are mapped to NZQA unit standards. However, the method of delivering these modules is inconsistent across and within organisations, with each tutor deciding on relevant

materials and approaches to discuss with each class. Adult vocational courses, particularly at New Zealand PTEs, are often run on a one-year contract basis due to current funding structures and tight resourcing (Neilson et al., 2006; Neilson & Culligan, 2004). Often adult vocational tutors take on the multiple roles of adult literacy tutor, vocational tutor, and sometimes even counsellor as they seek to engage their students in learning (Neilson et al., 2006). Given the stretched resources at these courses, a coping strategies workshop or series of workshops needs to take place outside of the course, preferably before the course begins (or alternatively, funding arrangements need to be made for such modules to be integrated or arranged as a precursor to courses within PTEs). The transition class model (see Koehler & Burke, 1996), which students attend in preparation for beginning a course of study could serve as a precursor to a range of courses within one institution. It would be necessary to involve all students regardless of literacy level in these workshops given the difficulty and stigma attached to identifying those with low literacy levels, as well as the likelihood that potential participants will not present if assessments of literacy skill are to be used to test for inclusion in the programme. Tests are often another negative reminder of school days and failure (Neilson et al., 2006).

Zeidner and Saklofske (1996) claim that both primary and secondary appraisals of threat need to be modified for alternative coping strategies to be taken on board. This may be due to attentional biases to primary appraisals of threat which result in default coping strategies unless the entire process is addressed.

Another approach that may be of use is the error management approach (see Keith & Frese, 2005). While Keith and Frese's paper refers to error management training in relation to computer programming, it is the concept rather than its application that is important here. In this training type, 'errors' or perhaps inefficient means of coping are used as examples from which the students learn through management of the error, or in terms of coping, perhaps role-playing alternative coping strategies which may or may not work. Keith and Frese (2005) found that

error management training approaches were more effective in subsequent performance on a test of the learned ability than error avoidant or mastery approaches. Zeidner and Saklofske (1996) support this assertion with the statement that coping models that make errors while working toward an appropriate solution are more effective in teaching new coping strategies than those based on mastery models. However, this recommendation would need to be explored further given the concern that potential failure could be highly threatening to low literacy individuals potentially leading to either mental or behavioural disengagement from coping strategy training events. It is also possible though that error or failure as modelled by others may not be seen as threatening to the same degree as error or failure experienced by the individual themselves.

Discussing all the available options for the design of such workshops is beyond the scope of this thesis. However, the interested reader is directed to the following articles and reviews which outline potential approaches: a review of training approaches including problem-focused and emotion-focused coping and attentional therapy (Zeidner & Saklofske, 1996); activities designed to alleviate maths anxiety and improve mathematical learners' self image could be helpful if modified to reflect literacy needs (Jackson & Leffingwell, 1999; Owens, Perry, Conroy, Geoghegan, & Howe, 1998); a review of specific strategies that can be used in adult education settings to enhance coping strategies and strengths of those of low literacy (Ross, 1987); a five-hour coping skills programme based on self-efficacy theory and locus of control (Smith, 1989); the transition class model (Koehler & Burke, 1996); and, the NZ 'Unstress' programme, a ten week community-based stress management programme (Raeburn, Atkinson, Dubignon, McPherson, & Elkind, 1993). Hembree's (1988) review of test or evaluative anxiety interventions showed that cognitive-behavioural interventions could be useful in reducing test anxiety (both physiological and psychological effects) in group and individual settings. Interestingly, study skills training by itself was found to be ineffective in reducing test anxiety (Hembree, 1988). Wine (1980) suggests this may be because study skills training does not address the cognitive aspects of negative self-focus and attention to evaluative cues at the

expense of task cues that characterise the high test anxious person. Further, specific strategies that can be used to enhance the low literacy individual's positive interaction with an educational environment are outlined by Becker et al. (1982).

As an important limitation, Trenberth and Dewe (2006) have argued that interventions that focus on one particular type of strain will not necessarily have a universal beneficial effect across all strain types in a particular domain. As a further step for development of effective interventions, research into the particular stressors and strains felt by those of differing literacy levels would be beneficial.

6.6 LIMITATIONS

The data reported in this thesis are correlational in nature and are unable to determine causal relationships. The direction of the relationship between low literacy and coping style or strategy use is unable to be clarified. It may be that avoidance coping strategies with regard to past educational experiences have led to low literacy levels, or low literacy levels lead to more use of avoidance coping strategies. The causal mechanisms are difficult to determine given the lack of longitudinal research with this sub-sample of the general population, combined with the inherent variability associated with real-world human research.

It is acknowledged that dispositional approaches are only one part of the two-piece puzzle of determining coping reactions through the interaction of disposition and situation. However, as this study is a first exploration of the relationship of coping styles and strategies and prose literacy, the compromise was made to explore dispositional ways of coping across individuals within adult vocational education contexts to allow for a general picture to be attained first. Further, dispositional coping styles and strategies may be more akin to situational accounts when particular types of context or domain are explored. Pearlin and Schooler (1978) and

Wearing and Hart (1996) have shown a consistency of coping approach within stress domains, and differing coping approaches across domains. Correlations between dispositional and situational accounts within particular situational domain are not strong but strong correlations are not to be expected given that dispositional accounts take note of a range of coping incidents and the usual means of coping or the common factors between them, while situational accounts are limited to one particular incident where preferred ways of coping may be constrained or only partially useful.

This research had a restricted sample. The sample is not representative of all adults taking vocational courses as the sampling strategy particularly focused on community-level and low-level qualification courses (i.e., NZQA certificates) to ensure adequate sampling of those across the range of literacy score. The sampling frame resulted in the majority of participants being sourced from PTEs and Polytechnics. Further, those that volunteered were likely to have done at least one year of secondary school. Therefore, generalisability of these findings is limited to those adults of at least secondary school educational level taking part in entry-level tertiary education. The findings are also limited due to the gender split of the sample. The majority (85.5%) of respondents were female; therefore, the findings should be interpreted as reflecting the female position for the most part until further research is conducted with larger male samples.

The sample size of 56 participants, while adequate for the key analyses, restricts the generalisability of the results and does not lend itself well to analyses of persistence, due to the low number of non-persisters, although this may have been more a function of the type of person who volunteers for such a study rather than a function of overall sample size. The lack of participants in the sample who had gained only a primary education resulted in a restricted range of education, and, therefore, (it is proposed) a non-significant effect of this variable with literacy score. It can be expected that a significant effect would have been found had the range

not been restricted.

The generalisability of findings to those who do not participate in adult learning is limited. The results presented here are most relevant to those adults with differing literacy levels who choose to take part in adult vocational programmes. As this design did not employ random allocation to groups, as literacy score is a naturally distributed phenomenon, it is possible that the generalisability of findings to the wider population of all those with lower literacy levels is limited.

As responses to the COPE were reliant on self-report, there was no way of ensuring that the intensity of the threats or challenges the participant thought about in their response was the same from person to person. This could impact on the level of coping item frequency endorsed. Further, respondents determined their own definition of stress. Different definitions of this term could be argued to introduce variability in responses. However, the phenomenological approach holds that self-perceptions of stress are accurate measures of the concept as appraisal of stress is a unique individual phenomenon. Use of self-report in this assessment tool and the EQI: S is also a limitation as it relies on retrospective memory and there is no way of directly checking the validity of the responses.

Further, respondents reflected on different temporal dimensions in their answers to the COPE questionnaire at time one and time two. At the first interview, they reflected on their general means of coping with stress in their most recent prior course, whereas the second interview required reflection on the current vocational course. These two reference points may have led to some of the small discrepancies seen in coping strategy use across time, however, results were largely replicated from time one to time two. The similar results imply that, as these two reference points were within the same situational domain, there is little impact on the validity of the results.

Use of assessments derived within American culture is also a limitation of this research. The researcher, however, is unaware of any New Zealand derived measures of coping strategies, emotional intelligence, and literacy that could be used in the place of the tools used in the present study.

Different times of day for the interviews (morning versus afternoon meetings) could have had an impact on concentration and fatigue levels during the interview. Different locations for the interviews across participants could also have had an impact on the answers given. It was thought that familiar, and yet private, environments might feel more comfortable for participants than an environment they had never visited before. It was also thought that if participants felt comfortable in their environment, they might be more open in their responses. Therefore, a familiar, quiet, private environment was chosen, and the first qualitative questions of each of the four interviews were deliberately kept general and easily-answered. For example, demographic questions were asked or questions as to what the participant had been doing lately, to try to make the participant feel as comfortable as possible as quickly as possible.

A major limitation of the entire stress and coping field is the difficulty of making comparisons due to the different subscales and item configurations used in each study.

6.7 FUTURE RESEARCH

Future research in this area would benefit from an analysis of situational aspects of coping with stress in learning environments. It may be that particular types of stressors or particular kinds of context are especially critical for individuals with low literacy who are participating in vocational courses. Trenberth and Dewe's (2006) use of sequential tree analysis techniques could be applied to a study of the patterns and structure of stressors and strains across literacy levels in the educational domain. Further, studies that investigate the appraised meaning of these

stressors would be important (Dewe & Trenberth, 2004) and would provide an understanding of why particular stressors (or a pattern of stressors) may result in particular coping responses.

Studies that reviewed the dispositional aspects of coping with reference to document and quantitative literacy would provide a clearer picture of the relationship of coping styles and strategies to the concept of functional literacy as a whole. Situational understandings of actual coping behaviours in process and the influence of the context on coping response choice is also a natural next step in investigating the relationship of literacy to coping response further.

Qualitative research into coping styles and strategies among those of differing literacy levels could seek out additional strategies that may not be captured through a pre-defined quantitative coping assessment tool. This method may identify further strengths of low literacy individuals which could assist in the development of coping strategy interventions. Qualitative research exploring the experience of stress, the perceived functions of coping behaviours, and the perceptions of affect experienced by literacy level would also extend the current findings.

Of particular interest to the author of the current study, future research that explored the proposed relationship between low literacy level and heightened self-focus would be welcomed. On a related note, explorations of the conditions by which those with lower literacy levels could enhance the frequency of use or efficacy of use of problem-focused coping strategies would be of use to development of any interventions in this area.

Research on appropriate interventions for use with individuals of low literacy is sorely needed given the high level of low literacy levels in NZ (47% amongst the working age population) (Satherley et al., 2008) and internationally (OECD, 2000). Appropriate intervention packages need to be designed that address the unique characteristics needed when working with this group. Empathetic tutors, illustrative materials, minimum written work and resources, and a supportive environment are only a few of the key features needed for any programme that works

with these individuals (see Becker et al., 1982 for a review of the key aspects).

CHAPTER 7 – CONCLUSIONS

The avoidance coping styles and strategies of individuals with low literacy levels as pertains to their engagement in adult literacy programmes and literacy activities have been anecdotally recorded throughout the literature (for example, Berg & Lick, 2001, and Ross, 1987), usually alongside discussions of demographic indicators of low literacy skill (Culligan et al., 2004; OECD, 2000). Qualitative studies have added to the understanding of this group by exploring the learning and wider socio-cultural needs of adult literacy learners (Tilley et al., 2006) as well as the barriers this group faces in participating in adult education (Ross, 1987; Sligo et al., 2005). Lacking from this literature has been a systematic quantitative measurement of literacy skill linked to psychometric assessments of coping dispositions. The current project sought to fill this gap with particular reference to engagement in adult vocational programmes given current national and international government attention on up-skilling individuals with low literacy levels (Ministry of Education, 2001; OECD, 2000; Tertiary Education Commission, 2002, 2007). The present study aimed, as a necessary first step, to provide an understanding of dispositional coping styles and strategies used by those of low functional prose literacy to respond to stress in adult vocational courses. A sample of individuals with higher prose literacy scores were also recruited to allow for an investigation of coping style and strategy use as it may or may not differ by literacy level. It was proposed that this information could contribute towards the development of educational coping strategy training workshops for the benefit of students with low literacy levels.

All participants in the current study, irrespective of literacy level, were found to use both emotion-focused and problem-focused strategies when responding to educational stressors. However, the present study showed that participants with low prose literacy scores were significantly more likely to use emotion-focused coping strategies, particularly avoidance

strategies, and were less likely to persist (defined as staying until the end of the course). Participants with high prose literacy scores were significantly more likely to use problem-focused coping strategies. Of interest, respondents with high prose literacy levels used emotional social support and instrumental social support more often than those of lower levels, implying that use of social support may support the ability to actively address the stressor.

The significant use of avoidance coping strategies in response to educational stressors by individuals with low prose literacy scores was interpreted as a habitual coping response brought about through negative prior experiences of formal learning, a phenomenon generally reported by adult literacy participants (Berg & Lick, 2001; Ross, 1987). Avoidance can be viewed as a means to avoid failure and rejection and subsequent negative effects on self-esteem. Lazarus's (1966) and Lazarus and Folkman's (1984) proposition of motive conflict was viewed as an important explanatory concept given that individuals of low literacy levels had a motive to engage in adult education combined with a motive to avoid formal educational environments which have been threatening in the past. The motive to engage is strong enough to overcome the initial, perhaps habitual, mode of avoidance coping with regard to engagement in literacy activities. However, as the low literacy individual participates in the course, habitual modes of avoidance coping were evidenced.

Carver and Scheier's (1981, 2000) control theory of self-regulation provided a model within which low literacy individuals could be seen to be working to decrease the perceived discrepancy between their present selves and the behavioural standard provided by completing their vocational course. One aspect of this model, self-focus, described a framework for understanding why individuals with low literacy levels may develop negative self-schema for themselves as learners (developed via negative prior learning experiences) and subsequent avoidance strategies in educational environments. Self-focus can in some instances be beneficial, but it is argued in the current project that when self-focus is combined with low self-

confidence, generally reported by low adult literacy learners (Neubauer & Dusewicz, 1988), and negative self-schema for the environment the individual is currently within, it can result in negative affect and an impulse to avoid the stress stimuli. Self-focus of this nature can in turn lead to attentional biases where a focus on the avoidance strategies occurs at the expense of problem-focused or task-focused strategies (Matthews & Wells, 1996). The current study found that, while individuals with low literacy levels did use problem-focused strategies, they did not use these to the same extent as high literacy individuals. The differential preference for emotion-focused and problem-focused strategies seen by literacy score was also argued to be potentially partially explained by a differential appraisal process whereby individuals of higher literacy levels may appraise challenge where individuals of lower literacy levels may be predisposed to appraise threat.

The proposal that interventions can be designed to train individuals on coping strategies to enhance learning and decrease stress within formal learning environments is dependent on the premise that coping styles and strategies are changeable. There is some conflict in the literature as to whether dispositional coping styles can change; however, it is emphasised throughout this report that dispositional coping styles are not static entities. The present study showed that while the average problem-focused coping style score did not change significantly over time, emotion-focused coping style score decreased significantly (this effect was mainly due to changes in the use of two particular strategies). This suggests that over time certain strategies, while still in use, are not necessarily in use to the same degree. The reasons why these strategies are used less by the participants overall was not explored by this study, but an important future extension of this work could explore under what conditions specific emotion-focused coping strategies such as avoidance (especially its use over the long-term) could be decreased and the use of problem-focused strategies increased.

As a first step of investigating literacy level and dispositional coping style and strategies,

the current project has indicated the presence of a relationship between these two constructs. Further exploration of the particular patterns of stressors and strains that give rise to these coping styles and strategies will be of particular use to exploring the purpose and function behind these coping approaches. This in turn should allow for an extension to the evidence base that has begun with this study for future interventions targeted specifically at making adult educational environments safe and productive places for those of low literacy levels.

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APPENDIX A

Information Sheet

What motivates you to learn and come to this course?

INFORMATION SHEET

Hi! My name is Niki Murray and I am currently doing my doctoral study in Psychology. I am interested in what kinds of things motivate people to learn in the courses they are on, what motivates them to continue to come to their courses, and how people cope with being on a course. I am also looking at what helps people to achieve their employment goals once the training course they are on has finished.

A second part of the project also asks you to take part in some reading activities with me (Niki). You do not have to be good at reading to take part in the project! We do this so that any improvements in your reading can be noted over time. No-one will see your responses except for you and me.

My supervisor's name is Dr Fiona Alpass, and both Fiona and I can be contacted anytime at the details provided at the end of this Information Sheet.

Who is being invited to take part in this study?

I am looking for up to 200 people to take part in this study. You will have been told about this study by your Personal Education Plan Officer, or your tutor. You have been invited to participate in this study as you are taking a vocational training course. You also must be between the ages of 16-65, and be taking this course to improve your chances of getting a job, or to improve your ability to do a job. If this sounds like you, I would love to hear from you!

I am inviting people to take part in this study so that I can begin to make general statements about the things that motivate people to learn, ways that people cope with their learning and cope with staying in the course, and how they achieve or move toward their goals. It is hoped that this information will help people and tutors to understand more about what helps and hinders learning, and what things can be done to improve courses for learners.

What would you need to do?

You will be asked to meet with me two times for an interview: once in the next few weeks, and once when you leave your course. You will also be asked to talk to me by phone for about ten minutes three months after you have left your course, and again six months after you have left your course. I will call you both times.

As a thank you for taking the time to be in this study, I would like to offer you the choice of either a \$10 petrol voucher or one adult movie ticket each time you take part in an interview. This will be given to you at the end of each interview.

The two interviews should take up to an hour and a half of your time and will be held at your local campus or a place in the community you are comfortable in at a time that suits you. If you are happy for these interviews to be audio-taped this can happen. I wish to record your responses only so that I have an accurate understanding of what you have said.

At each of these meetings I would like to ask you some questions about:

- Goals or things that you aspire to
- The course that you are taking part in
- How you have coped with learning or courses in the past
- Your family and schooling background and

- Your attitudes to learning

I would also like to give you some examples of situations so that we might discuss how you would usually react if faced with that situation. Further, I will ask you to take part in some reading activities at both interviews. Finally, during the two phone calls, I would like to ask you about your progress toward your employment goals and what has helped you or stopped you along the way. There are no right or wrong answers to any of these questions.

What do you do if you wish to take part or want to hear more about the study?

If you would like to hear more about this project before making a decision you can tell the person who gave you this letter who will pass on your contact details to me (Niki). This person will ask you to sign a form to say that you are happy for your contact details to be given to me so you can learn more about the project. This does not mean that you are agreeing to be a part of the project. I will then call you and answer any questions you may have.

If you would like to take part in the study, please tell the person who gave you this letter. This person will then contact me to set up a first meeting with you, at a time that suits you.

What will happen to your information?

The responses that you give will be put together with the responses of all the other people to form general results. All information that will be able to identify you individually will be kept confidential. This means that no-one else will have access to your personal information other than you and Niki.

The general information will be used in a PhD thesis, reports, and academic articles. The key findings may also be reported in reports from the Literacy and Employment project, which is another larger project on similar issues currently being run in Wanganui. The information will

be stored in a secure cabinet in a secure office at Massey University, Palmerston North. After five years, all individual data from this study will be destroyed.

If you wish to obtain a summary of the general project findings at the end of the project, please tell Niki at any time and a summary will be sent to you. If you would like to discuss your individual results at the end of the study, I would be more than happy to meet with you and discuss these. You will be asked at your final interview if you wish to meet to discuss your individual results once the analysis is complete.

Participant's Rights

You are under no obligation to accept this invitation. If you decide to take part, you have the right to:

- *decline to answer any particular question;*
- *withdraw from the study at any time;*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded.*
- *ask for the audio tape to be turned off at any time during the interview.*

Please feel free to contact Niki or Fiona on the details below if you have any questions about the research or just wish to know more!

Niki Murray
Dpt of Communication & Journalism
Massey University
Private Bag 11 222
Palmerston North
Ph: (06) 356 9099 ext 5941
Email: n.s.murray@massey.ac.nz

Dr Fiona Alpass
School of Psychology
Massey University
Private Bag 11 222
Palmerston North
Ph: (06) 356 9099 ext 2071
Email: F.M.Alpass@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee, Palmerston North Application 05/115. If you have any concerns about the ethics of this research, please contact Dr John G O'Neill, Chair, Massey University Campus Human Ethics Committee: PN, telephone 06 350 5799 xt 8635, email humanethicspn@massey.ac.nz.

What motivates you to learn and come to this course?

POTENTIAL PARTICIPANT CONSENT FORM

This consent form will be held for a period of five (5) years

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my liking, and I understand that I may ask further questions at any time.

I agree to my contact details being passed on to Niki Murray, the researcher, so I can hear more about the project.

Signature:

Date:

**Full Name
printed**

.....
.....

Contact Details:

Address:

.....
.....

Phone Number (preferred): _____

Email Address: _____

APPENDIX B

Demographic Questionnaire

Demographic Information

Name:

Date of Interview:

1. **Gender:** Male
 Female

2. **Age Group:** 16-20
 21-30
 31-40
 41-50
 51-60
 61-64
 65+

3. **Ethnicity: (may choose more than one)**

Maori
NZ European
Pacific Peoples
Asian Peoples
Other, please specify:.....

4. **Employment status at the present time:**

Full-Time Employed (30 hours or more a week)
Part-Time Employed (Less than 30 hours a week)
Casual Employment
House Person or Retired
Student/Trainee
Unemployed
Other, please specify:.....

Participants were asked if they were working and in what capacity. Sometimes their response would result in several categories being checked.

5. **Educational Achievements Before this Course:**

Primary School Only
Up To 3 Years Secondary School
Four or More Years Secondary School
Up To 3 years Tertiary Education
(polytech, university or other training institute)
Three years or more tertiary education

Participants were asked when they finished formal schooling and gave a year. They were also asked if they completed the year they left in, or whether they had left part of the way through. Finally, they were asked what courses (if any) they had been on since school, and all mentioned were noted down.

-
6. **First Language:** English
Maori
Other; Please specify:.....

Where participants indicated they spoke more than one language as their first language, further questions were asked to determine that English had been spoken from birth.

7. **Iwi Affiliation:**

Affiliated with either Whanganui Iwi or Te Atihaunui-a-Paparangi? **Yes/No**

Known Hapu affiliation? **Yes/No** If yes, please state:.....

8. **Health**

Have you had any health issues that affect your learning currently e.g. issues with eyesight, hearing, illness, physical or other disability? **Yes/No**

If yes, please provide brief details:

.....
.....

9. **As a thank you for taking the time to be interviewed, I would like to give you your choice of either an adult movie ticket or a \$10 petrol voucher. Which would you like? Please tick:**

An Adult Movie Ticket

A \$10 Petrol Voucher

10. **Are you happy to be contacted for a second interview at the end of your course?**
Yes/No

APPENDIX C

*The COPE Scale, Examples of COPE Scale Items in A5 Presentation, Participant COPE
Response Sheet*

The COPE Scale

The instructions and scale below are from Carver (n.d.).

Instructions

I am interested in how people respond when they are faced with difficult or stressful events in their learning lives. There are a lot of ways to try to deal with stress. I am going to say a series of statements to you, one at a time, and I would like you to indicate on the sheet here, what you generally do and feel, when you experience stressful events. Obviously different events bring out somewhat different responses, but try to think about what you usually do when you are under a lot of stress when you are taking part in your course.

So I would like you to think about the course you are on now (or in the case of the first interview the most recent course you have been on since you left school), and respond to the statements I say by highlighting the relevant number on your sheet. For instance, if I were to say, "I laugh about the situation", you may think when I'm stressed about something in a course I don't do this (laugh about it) at all (researcher points to 1), I do this a little bit (points to 2), I do this a medium amount (points to 3), or I do this a lot (points to 4).

Please try to respond to each item separately from each other item (for example, once you've highlighted a number for one statement, don't let it influence your decision for the next one). Take your time to choose your answer, and make your answers as true for you as you can. Please answer every item. There are no right or wrong answers, so choose what is true for you, not what you think most people would say or do. Indicate only what YOU usually do when YOU experience stressful events in a training course.

Likert Scale

1 = I usually don't do this at all

2 = I usually do this a little bit

3 = I usually do this a medium amount

4 = I usually do this a lot

COPE Scale Items

1. I try to grow as a person as a result of the experience.
2. I turn to work or other substitute activities to take my mind off things.
3. I get upset and let my emotions out.
4. I try to get advice from someone about what to do.
5. I concentrate my efforts on doing something about it.
6. I say to myself "this isn't real."
7. I put my trust in God.
8. I laugh about the situation.
9. I admit to myself that I can't deal with it, and quit trying.
10. I restrain myself from doing anything too quickly.
11. I discuss my feelings with someone.
12. I use alcohol or drugs to make myself feel better.
13. I get used to the idea that it happened.
14. I talk to someone to find out more about the situation.
15. I keep myself from getting distracted by other thoughts or activities.
16. I daydream about things other than this.
17. I get upset, and am really aware of it.
18. I seek God's help.

-
19. I make a plan of action.
 20. I make jokes about it.
 21. I accept that this has happened and that it can't be changed.
 22. I hold off doing anything about it until the situation permits.
 23. I try to get emotional support from friends or relatives.
 24. I just give up trying to reach my goal.
 25. I take additional action to try to get rid of the problem.
 26. I try to lose myself for a while by drinking alcohol or taking drugs.
 27. I refuse to believe that it has happened.
 28. I let my feelings out.
 29. I try to see it in a different light, to make it seem more positive.
 30. I talk to someone who could do something concrete about the problem.
 31. I sleep more than usual.
 32. I try to come up with a strategy about what to do.
 33. I focus on dealing with this problem, and if necessary let other things slide a little.
 34. I get sympathy and understanding from someone.
 35. I drink alcohol or take drugs, in order to think about it less.
 36. I kid around about it.
 37. I give up the attempt to get what I want.
 38. I look for something good in what is happening.
 39. I think about how I might best handle the problem.
 40. I pretend that it hasn't really happened.
 41. I make sure not to make matters worse by acting too soon.
 42. I try hard to prevent other things from interfering with my efforts at dealing with this.
 43. I go to movies or watch TV, to think about it less.
 44. I accept the reality of the fact that it happened.
 45. I ask people who have had similar experiences what they did.

46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.
47. I take direct action to get around the problem.
48. I try to find comfort in my religion.
49. I force myself to wait for the right time to do something.
50. I make fun of the situation.
51. I reduce the amount of effort I'm putting into solving the problem.
52. I talk to someone about how I feel.
53. I use alcohol or drugs to help me get through it.
54. I learn to live with it.
55. I put aside other activities in order to concentrate on this.
56. I think hard about what steps to take.
57. I act as though it hasn't even happened.
58. I do what has to be done, one step at a time.
59. I learn something from the experience.
60. I pray more than usual.

Examples of A5 Presentation

Each of the below items were presented on a separate sheet of A5 paper.

1. I try to grow as a person as a result of the experience.

**2. I turn to work or other substitute activities
to take my mind off things.**

Participant Cope Response Sheet

| | 1 I usually <u>don't</u> do this at all | 2 I usually do this a <u>little bit</u> | 3 I usually do this a <u>medium</u> <u>amount</u> | 4 I usually do this a <u>lot</u> |
|---------------------|---|--|--|---|
| Statement 1 | 1 | 2 | 3 | 4 |
| Statement 2 | 1 | 2 | 3 | 4 |
| Statement 3 | 1 | 2 | 3 | 4 |
| Statement 4 | 1 | 2 | 3 | 4 |
| Statement 5 | 1 | 2 | 3 | 4 |
| Statement 6 | 1 | 2 | 3 | 4 |
| Statement 7 | 1 | 2 | 3 | 4 |
| Statement 8 | 1 | 2 | 3 | 4 |
| Statement 9 | 1 | 2 | 3 | 4 |
| Statement 10 | 1 | 2 | 3 | 4 |
| Statement 11 | 1 | 2 | 3 | 4 |
| Statement 12 | 1 | 2 | 3 | 4 |
| Statement 13 | 1 | 2 | 3 | 4 |
| Statement 14 | 1 | 2 | 3 | 4 |
| Statement 15 | 1 | 2 | 3 | 4 |
| Statement 16 | 1 | 2 | 3 | 4 |
| Statement 17 | 1 | 2 | 3 | 4 |
| Statement 18 | 1 | 2 | 3 | 4 |
| Statement 19 | 1 | 2 | 3 | 4 |
| Statement 20 | 1 | 2 | 3 | 4 |
| Statement 21 | 1 | 2 | 3 | 4 |
| Statement 22 | 1 | 2 | 3 | 4 |
| Statement 23 | 1 | 2 | 3 | 4 |

| | 1 I usually <u>don't</u> do this at all | 2 I usually do this a <u>little bit</u> | 3 I usually do this a <u>medium</u> <u>amount</u> | 4 I usually do this a <u>lot</u> |
|--------------|---|--|--|---|
| Statement 24 | 1 | 2 | 3 | 4 |
| Statement 25 | 1 | 2 | 3 | 4 |
| Statement 26 | 1 | 2 | 3 | 4 |
| Statement 27 | 1 | 2 | 3 | 4 |
| Statement 28 | 1 | 2 | 3 | 4 |
| Statement 29 | 1 | 2 | 3 | 4 |
| Statement 30 | 1 | 2 | 3 | 4 |
| Statement 31 | 1 | 2 | 3 | 4 |
| Statement 32 | 1 | 2 | 3 | 4 |
| Statement 33 | 1 | 2 | 3 | 4 |
| Statement 34 | 1 | 2 | 3 | 4 |
| Statement 35 | 1 | 2 | 3 | 4 |
| Statement 36 | 1 | 2 | 3 | 4 |
| Statement 37 | 1 | 2 | 3 | 4 |
| Statement 38 | 1 | 2 | 3 | 4 |
| Statement 39 | 1 | 2 | 3 | 4 |
| Statement 40 | 1 | 2 | 3 | 4 |
| Statement 41 | 1 | 2 | 3 | 4 |
| Statement 42 | 1 | 2 | 3 | 4 |
| Statement 43 | 1 | 2 | 3 | 4 |
| Statement 44 | 1 | 2 | 3 | 4 |
| Statement 45 | 1 | 2 | 3 | 4 |
| Statement 46 | 1 | 2 | 3 | 4 |
| Statement 47 | 1 | 2 | 3 | 4 |
| Statement 48 | 1 | 2 | 3 | 4 |
| Statement 49 | 1 | 2 | 3 | 4 |

| | 1 I usually <u>don't</u> do this at all | 2 I usually do this a <u>little bit</u> | 3 I usually do this a <u>medium</u> <u>amount</u> | 4 I usually do this a <u>lot</u> |
|---------------------|---|--|--|---|
| Statement 50 | 1 | 2 | 3 | 4 |
| Statement 51 | 1 | 2 | 3 | 4 |
| Statement 52 | 1 | 2 | 3 | 4 |
| Statement 53 | 1 | 2 | 3 | 4 |
| Statement 54 | 1 | 2 | 3 | 4 |
| Statement 55 | 1 | 2 | 3 | 4 |
| Statement 56 | 1 | 2 | 3 | 4 |
| Statement 57 | 1 | 2 | 3 | 4 |
| Statement 58 | 1 | 2 | 3 | 4 |
| Statement 59 | 1 | 2 | 3 | 4 |
| Statement 60 | 1 | 2 | 3 | 4 |

APPENDIX D

*Instructions for the EQ-I: S, Examples of EQ-I: S Scale Items in A5 Presentation,
Participant EQ-I: S Response Sheet*

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Instructions for the EQ-I: S

Now I'd like to ask you a few more questions similar to what we did before with the statements that you answered by selecting a number.

The purpose of this questionnaire is to learn more about the way you think, feel and behave in general (so think about yourself in general, not just about learning situations). There are five possible responses to each statement: Very seldom or Not True of me, Seldom true of me, Sometimes true of me, Often true of me, and Very often true of me or True of me (pointed out as they were said).

When I read out and show you each statement, I would like you to decide which one of the five possible responses best describes you. I would like you to highlight the number on this sheet that describes you the best.

If a statement does not apply to you, respond in such a way that will give the best indication of how you would possibly feel, think or act. Although some of the sentences may not give you all of the information you would like to receive, choose the response that seems the best, even if you're not sure. Again, there are no right or wrong answers and no good or bad choices. Answer openly and honestly by indicating how you actually are and not how you would like to be or how you would like to be seen. There is no time limit, but work quickly and make sure that you take note of and respond to each statement.

Examples of A5 Presentation

Each of the below items were presented on a separate sheet of A5 paper.

1. I'm a fairly cheerful person.

2. I like helping people.

Participant EQ-I: S Response Sheet

| | 1 Very seldom or not true of me | 2 Seldom true of me | 3 Sometimes true of me | 4 Often true of me | 5 Very often true of me or true of me |
|---------------------|--|-------------------------------|----------------------------------|------------------------------|--|
| Statement 1 | 1 | 2 | 3 | 4 | 5 |
| Statement 2 | 1 | 2 | 3 | 4 | 5 |
| Statement 3 | 1 | 2 | 3 | 4 | 5 |
| Statement 4 | 1 | 2 | 3 | 4 | 5 |
| Statement 5 | 1 | 2 | 3 | 4 | 5 |
| Statement 6 | 1 | 2 | 3 | 4 | 5 |
| Statement 7 | 1 | 2 | 3 | 4 | 5 |
| Statement 8 | 1 | 2 | 3 | 4 | 5 |
| Statement 9 | 1 | 2 | 3 | 4 | 5 |
| Statement 10 | 1 | 2 | 3 | 4 | 5 |
| Statement 11 | 1 | 2 | 3 | 4 | 5 |
| Statement 12 | 1 | 2 | 3 | 4 | 5 |
| Statement 13 | 1 | 2 | 3 | 4 | 5 |
| Statement 14 | 1 | 2 | 3 | 4 | 5 |
| Statement 15 | 1 | 2 | 3 | 4 | 5 |
| Statement 16 | 1 | 2 | 3 | 4 | 5 |
| Statement 17 | 1 | 2 | 3 | 4 | 5 |
| Statement 18 | 1 | 2 | 3 | 4 | 5 |
| Statement 19 | 1 | 2 | 3 | 4 | 5 |
| Statement 20 | 1 | 2 | 3 | 4 | 5 |
| Statement 21 | 1 | 2 | 3 | 4 | 5 |
| Statement 22 | 1 | 2 | 3 | 4 | 5 |

| | 1 Very seldom or not true of me | 2 Seldom true of me | 3 Sometimes true of me | 4 Often true of me | 5 Very often true of me or true of me |
|---------------------|--|-------------------------------|----------------------------------|------------------------------|--|
| Statement 23 | 1 | 2 | 3 | 4 | 5 |
| Statement 24 | 1 | 2 | 3 | 4 | 5 |
| Statement 25 | 1 | 2 | 3 | 4 | 5 |
| Statement 26 | 1 | 2 | 3 | 4 | 5 |
| Statement 27 | 1 | 2 | 3 | 4 | 5 |
| Statement 28 | 1 | 2 | 3 | 4 | 5 |
| Statement 29 | 1 | 2 | 3 | 4 | 5 |
| Statement 30 | 1 | 2 | 3 | 4 | 5 |
| Statement 31 | 1 | 2 | 3 | 4 | 5 |
| Statement 32 | 1 | 2 | 3 | 4 | 5 |
| Statement 33 | 1 | 2 | 3 | 4 | 5 |
| Statement 34 | 1 | 2 | 3 | 4 | 5 |
| Statement 35 | 1 | 2 | 3 | 4 | 5 |
| Statement 36 | 1 | 2 | 3 | 4 | 5 |
| Statement 37 | 1 | 2 | 3 | 4 | 5 |
| Statement 38 | 1 | 2 | 3 | 4 | 5 |
| Statement 39 | 1 | 2 | 3 | 4 | 5 |
| Statement 40 | 1 | 2 | 3 | 4 | 5 |
| Statement 41 | 1 | 2 | 3 | 4 | 5 |
| Statement 42 | 1 | 2 | 3 | 4 | 5 |
| Statement 43 | 1 | 2 | 3 | 4 | 5 |
| Statement 44 | 1 | 2 | 3 | 4 | 5 |
| Statement 45 | 1 | 2 | 3 | 4 | 5 |
| Statement 46 | 1 | 2 | 3 | 4 | 5 |
| Statement 47 | 1 | 2 | 3 | 4 | 5 |
| Statement 48 | 1 | 2 | 3 | 4 | 5 |

| | 1 Very seldom or not true of me | 2 Seldom true of me | 3 Sometimes true of me | 4 Often true of me | 5 Very often true of me or true of me |
|---------------------|--|-------------------------------|----------------------------------|------------------------------|--|
| Statement 49 | 1 | 2 | 3 | 4 | 5 |
| Statement 50 | 1 | 2 | 3 | 4 | 5 |
| Statement 51 | 1 | 2 | 3 | 4 | 5 |

APPENDIX E

Instructions for the Prose Tests of Applied Literacy Skills

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Instructions for the Prose Test of Applied Literacy Skills

The activities you are about to do will provide information about how you apply reading and writing skills. You will be asked to answer questions based on the kinds of printed materials adults come into contact with on a daily basis.

This particular group of activities you will be doing will provide information about your skills in reading and understanding information found in such materials as newspapers, magazines, and books.

With these activities, you will answer the questions in several ways. For some, you will write your answers on the lines provided. For others, you will indicate your answers by circling or underlining a sentence or word. The directions will explain how and where you are to answer. Do not write your answers on the blanks at the bottom of the pages.

The booklet is handed to the participant.

On page 1, please read the directions and answer the practice questions. When you finish, please wait for an explanation of the answers.

For practice question number one, you should have underlined the sentence in the first paragraph, "We will walk there and back". For practice question number two, you should have written October 20th or Thursday October 20th on the answer line.

No-one is expected to be able to answer correctly all the questions in this booklet; however, it is important that you try to answer each one. I am not allowed to help you with anything specifically related to completing a question, so if you cannot answer a question, go to the

next one. Don't spend a lot of time on one question if you find it too difficult; I would like you to try as many of them as possible.

This booklet has two sections. The end of the first section is indicated by a Stop Sign.

You will have 20 minutes to work on each section. I will tell you when to begin each section and when to stop. If you complete a section before the time is up, you can go back to work on any questions you may have skipped in that section. If you finish working on the first section before time is up, let me know that you are done, and I will then tell you when you can continue on to the second section. Again, if you finish section two before the twenty minute time limit and you do not have any further changes to make in this section, then let me know you are done. (You cannot go back to Section One, once you have started Section Two).

APPENDIX F

Interview Schedule for the First Interview

Interview Schedule for the First Interview

Section One

The current course:

How long have you been in this course?

Why did you decide on this course?

What do you hope to get from it (if anything)?

How did you find this course?

What do you like about it/not like about it?

Once you are finished here, what will be your next steps?

Employment goals?

Have you missed any parts of this course so far? Why/Why not?

Do you think there would be anything that would stop you coming to or completing this course?

Have you been on any other courses before this one (aside from school)?

Why did you do this course?

What did you like/not like?

How long was each course?

Did you leave before the end? If yes, why? If no, what kept you going?

Did you achieve what you set out to achieve from it?

School

What was school like for you?

Were you always planning to leave in (last year of school)? Why was that?

Has there ever been anything in your learning life that you have found hard to grasp or understand?

If so, how did you deal with that? What did you do?

Ask participants to give a general timeline of the courses/employment they have been on since they left school up to the current point.

Section Two

Take some time to think about a time in your learning/course or outside the course where you have been stressed or frustrated by something. When you have thought of something, I want you to describe that instance to me.

Would you have described yourself as stressed by this? (a handful have said they are not great stressors and it is more frustration, most have described themselves as stressed).

What do you think it was that made you stressed (what was at stake)?

Individual – emotional view on influencing factors – What did you think about what was going on? How did it make you feel?

Environmental – was anything going on at home, or with family and friends that may have contributed?

Strategies - What did you do?

Resources - How did you do it?

Consequences - What was the effect of doing that? What happened?

Why do you think you approached it in that way?

What do you think were the positive effects of dealing with the situation in that way?

What do you think were the negative effects/ things you wish you had avoided?

If the same situation happened now, would you approach it in the same way?

Have you approached situations like this in the past the same way?

When you are stressed, what do you think you are like to be around? How do you think others would describe you?

If participant cannot think of anything in their learning life that has ever stressed them, they are asked the above questions in terms of a recent incident in their general life.

APPENDIX G

Interview Schedule for the Second Interview

Interview Schedule for the Second Interview

Section One

The current course:

Those questions below marked with an asterix will be asked as they are below. After this the participant will then be reminded of what they said in the first interview in response to this question and asked if that is still valid or has changed since we last spoke. If it has changed or remained the same, they will be asked why they think this is (before the question is posed the participant will be assured that showing them their thoughts from the previous interview is not to 'catch them out' as it is normal for both people's thoughts to remain the same or for people's thoughts to change over time).

Did you complete the course? If no, why? If yes, at any time during the course did you think you would leave or need to leave? If yes, why was that?

Did the course meet your expectations as to what you wanted to get out of it? Why/why not?*

What did you like about it? What did you not like about it?*

What do you hope to do now? What are your next steps? (Prompt for employment).*

Has there ever been anything in your learning life that you have found hard to grasp or understand?

If so, how did you deal with that? What did you do?

Section Two

Take some time to think about a time in your learning/course or outside the course where you have been stressed or frustrated by something. When you have thought of something, I want you to describe that instance to me.

Would you have described yourself as stressed by this? (A handful have said they are not great stressors and it is more frustration, most have described themselves as stressed).

What do you think it was that made you stressed (what was at stake)?

Individual – emotional view on influencing factors – What did you think about what was going on? How did it make you feel?

Environmental – was anything going on at home, or with family and friends that may have contributed?

Strategies - What did you do?

Resources - How did you do it?

Consequences - What was the effect of doing that? What happened?

Why do you think you approached it in that way?

What do you think were the positive effects of dealing with the situation in that way?

What do you think were the negative effects/ things you wish you had avoided?

If the same situation happened now, would you approach it in the same way?

Have you approached situations like this in the past the same way?

When you are stressed, what do you think you are like to be around? How do you think others would describe you?

If participant cannot think of anything in their learning life that has ever stressed them, they are asked the above questions in terms of a recent incident in their general life.

APPENDIX H

Interview Schedule for the Telephone Interviews

Interview Schedule for the Telephone Interviews

Discussion around goal achievement or movement towards goals

How have things been with you since we last met? (Broad open question to stimulate talking, may cover the below questions without them needing to be asked).

What have you been up to since then?

Are you working or studying at the moment? What kind? How is that going for you?

What do you like/not like if studying/working? Would anything stop you going to work/study?

(Follow up here on work and study goals mentioned by the interviewee in the previous interview).

Where would you like to be in another three months time? (Work, study, personal goals).

How do you think you could get there?

What will you need to get there?

Is there anything that could hold you back? If so, what? How would you deal with that?

APPENDIX I

Validity Check of the EQI: S Measurement Tool

General mood

The EQI:S Technical Manual suggests interpreting with caution any standard scores lower than 80 on the General Mood scale (Bar-On, 2002). A score of below 80 suggests an individual who is more pessimistic than the average person in the normed sample (Bar-On, 2002). Evidence suggests the EQI:S overall emotional intelligence score is moderately positively correlated with the Trait Meta-Mood Scale (.58) (Bar-On, 2002). An inference that can be drawn from this is that mood could influence emotional intelligence to a moderate degree. Indeed, inter-correlations between the subscales of the EQI: S show a moderate to high positive correlation between the subscales of adaptability and general mood (ranging from .63 to .69 across four age groups (16 - 50+)) (Bar-On, 2002). Of all the subscales, however, adaptability shows the lowest correlations with general mood (Bar-On, 2002).

Thirteen of the interviewees at time one showed a low general mood score. Eight of these participants showed a consistently low general mood over time (from time one to time two). Two participants from this group were not interviewed at time two so comparisons were unable to be made. Eleven respondents at time two (a number which includes the eight mentioned with a consistently low mood at time one and time two) showed a low general mood score.

An independent samples *t*-test was proposed to explore whether participants (at time one and time two) with a low general mood were significantly different in their mean adaptability scores than respondents with a normal to high mood score. A grouping variable of mood was developed with scores of 79 and below considered to be 'low mood' and scores 80 or higher considered to be 'moderate to high mood'. The continuous adaptability subscale for time one did not meet the normality assumption. Subsequent removal of an extreme case (a score of 33 considered a markedly atypical score (Bar-On, 2002)) resulted in a normal distribution. The adaptability subscale for time two met the normality assumption. The independence of observations assumption was met as was the homogeneity of variance assumption.

At time one, there was no significant difference in adaptability scores for those with a low general mood ($M = 96.15$, $SD = 15.47$) and those with a general mood score of 80 or above ($M = 96.67$, $SD = 17.77$); $t(53) = -.09$, $p = .93$ (two-tailed), $d = .03$, $SP = .06$. The low statistical power may be due to the different group sizes in this analysis.

At time two, there was no significant difference in adaptability scores for those with a low general mood ($M = 82.36$, $SD = 23.19$) and those with a general mood score of 80 or above ($M = 90.92$, $SD = 18.36$); $t(47) = -1.28$, $p = .21$ (two-tailed), $d = .41$, $SP = .32$.

Therefore, as general mood was not exerting a large or moderate effect on adaptability scores, the adaptability data of those participants who reported a low general mood score were retained for further analyses.

Inconsistent or random responding

Each participant's inconsistency index scores were inspected. Bar-On (2002) suggests interpreting a participant's data cautiously when they show a higher than normal inconsistency score including exploring the interviewer's knowledge of the interviewee to rule out potential factors of response bias and/or time pressures that may have led to a random pattern of responding. Seven participants showed inconsistency scores higher than the recommended bar. The notes from each interview were reviewed to determine any factors such as time pressure or lack of understanding of the items that may have influenced the score. No evidence that suggested random responding or response bias was found.

To inspect the data further, the adaptability subscale scores for each of the seven participants were reviewed. Two participants had adaptability scores in the 'markedly low' category: scores of 68 and 62, respectively (standard scores in the EQI:S ranged from 80-89 for underdeveloped

emotional and social capacity, 90-109 for adequate emotional and social capacity, and 110-119 for well-developed emotional and social capacity) (Bar-On, 2002). Scores under 70 were considered atypical impairment of emotional and social capacity (Bar-On, 2002). Further inspection of the transcripts for these two participants showed that one had a psychological condition that influences social capacity. Thus, this participant's adaptability score was considered to be reflective of the respondent's current adaptability potential, and the score was retained. The second participant's adaptability score at time one (along with the remainder of this respondent's time one information) was removed from the analysis given that the inconsistency score and adaptability score (at time one only) were extreme values. It is possible that with this participant fatigue may have set in. The remaining five participants with higher than normal inconsistency scores were retained as their adaptability subscale scores fell within the parameters of a 'normal' range and there was no evidence otherwise to suggest that their pattern of responding was not accurate in reflecting their current state.

Positive or negative impressions

Two participants also showed extreme scores on the positive impression scale, one an extreme high score, one an extreme low score. Low scores on this scale can suggest response bias or "faking bad", while high scores can suggest "faking good" (Bar-On, 2002, p. 13). The interview notes for the participant with the low score at time one were reviewed as was the adaptability score. The adaptability score fell within the 'normal' range and no evidence was found in the interview notes to suggest 'faking bad'. Therefore, this participant's adaptability score was retained. The second participant (with the extreme positive score) had reported in her interview that she had suffered from clinical depression and therefore made an explicit, conscious effort to view aspects of her life in a positive way. It is possible therefore that her highly positive score was related to this conscious effort as opposed to any social desirability bias. As this score was

considered to be reflective of the respondent's current situation, this respondent's score was retained.

APPENDIX J

COPE subscale correlations at time two

A further test of the development of problem-focused and emotion-focused coping factors was undertaken through Cronbach alpha analyses on data from the same participants on the COPE scale at time two. It should be noted that the *N* for the time two data set is 48 (while the prior data set included 55 cases) due to the loss over time of seven participants.

The groupings from the time one data were used with the time two data to determine if the same patterns were evident. Table 16 shows the inter-scale correlation matrix for the time two COPE subscales. The first group including 'positive reinterpretation', 'acceptance', 'use of instrumental social support', 'active coping', 'restraint', 'suppression of competing activities', and 'planning' showed the following medium to large positive correlations with each other: 'planning', 'positive reinterpretation', 'acceptance', and 'active coping' correlated positively with four subscales; 'restraint' correlated positively with three; and, 'use of instrumental social support' and 'suppression of competing activities' correlated positively with one.

The second group including 'denial', 'religious coping', 'focus on and venting of emotions', 'use of emotional social support', and 'behavioural disengagement' correlated positively (with either a medium or large value) with one to two of the other subscales in that group: 'denial', 'use of emotional social support', and 'religious coping' correlated positively with two; and 'focus on and venting of emotions', and 'behavioural disengagement' correlated positively with one. Like the time one data, 'use of emotional social support' and 'use of instrumental social support' bridged both groups. The positive correlation between 'suppression of competing activities' and 'behavioural disengagement' (and its correlation with 'focus on and venting of emotions' at time one), as well as the correlation between 'restraint' and 'behavioural disengagement' are not unexpected. Positive correlations between different types of coping style should be seen given that different types of coping style are used in the same situation to approach the same stressor (Lazarus & Folkman, 1984).

Unlike the time one data, the 'humour' subscale positively correlated with 'positive reinterpretation' (.32) from group one. This suggested the 'humour' subscale needed to be tested for inclusion in the first group of subscales.

The negative correlations between subscales supported the separation of these two groups, although all of these correlations were small. There were no negative correlations seen between subscales within each group. Mention must be made of the 'humour' subscale which correlated negatively with 'behavioural disengagement', 'focus on and venting of emotions', and 'religious coping', suggesting this subscale measured something distinct from the second group.

Cronbach alpha coefficients of proposed groups at time two

A Cronbach alpha coefficient was calculated to test the internal consistency of the originally proposed groups. The first group was then tested to determine if an improved Cronbach alpha coefficient could be attained by inclusion of the 'humour' subscale.

The Cronbach alpha coefficient for group one (including 'positive reinterpretation', 'acceptance', 'use of instrumental social support', 'active coping', 'restraint', 'suppression of competing activities', and 'planning') was .78. The Cronbach alpha coefficient for group two (including 'denial', 'religious coping', 'focus on and venting of emotions', 'use of emotional social support', and 'behavioural disengagement') was .73.

The addition of the 'humour' subscale to the first group resulted in a lower Cronbach alpha coefficient of .76. This combined with its lack of moderate to strong relationship with any subscale at time one meant the 'humour' subscale was dropped from further analyses.

The optimal two-group split between variables at time one was replicated at time two.

Table 16
Inter-scale correlation matrix for the COPE subscales at time two

| | Positive | Denial | Religious | Emotion | Accept | Focus | Instrum. | Behav. d. | Active | Restraint | Humour | Planning | Suppress | Substance |
|------------------|-----------------|---------------|------------------|----------------|---------------|--------------|-----------------|------------------|---------------|------------------|---------------|-----------------|-----------------|------------------|
| Positive | 1.00 | -.065 | .223 | .291* | .363* | .167 | .432** | -.182 | .503*** | .221 | .315* | .511*** | .014 | .138 |
| Denial | | 1.00 | .396** | .285* | .114 | .223 | .206 | .602*** | -.182 | .171 | .121 | -.139 | .291** | .147 |
| Religious | | | 1.00 | .466** | .101 | .421** | .192 | .234 | .100 | .103 | -.032 | .107 | .125 | -.022 |
| Emotion | | | | 1.00 | .149 | .650*** | .619*** | .174 | .207 | -.028 | .182 | .312* | .317* | .292* |
| Accept | | | | | 1.00 | .090 | .171 | .107 | .500*** | .488*** | .169 | .353* | .204 | .245 |
| Focus | | | | | | 1.00 | .330* | .265 | .126 | -.061 | -.051 | .140 | .142 | .158 |
| Instrum. | | | | | | | 1.00 | .087 | .230 | .074 | .284* | .322* | .251 | .119 |
| Behav. d. | | | | | | | | 1.00 | -.113 | .355* | -.155 | -.183 | .351* | .178 |
| Active | | | | | | | | | 1.00 | .453** | .151 | .724*** | .088 | -.038 |
| Restraint | | | | | | | | | | 1.00 | .231 | .413** | .490*** | -.106 |
| Humour | | | | | | | | | | | 1.00 | .262 | .061 | .010 |
| Planning | | | | | | | | | | | | 1.00 | .263 | -.114 |
| Suppress | | | | | | | | | | | | | 1.00 | -.022 |
| Substance | | | | | | | | | | | | | | 1.00 |

Note: Where a subscale name was shortened to fit the table parameters, the full subscale name was provided here: Positive = positive reinterpretation; Religious = Religious coping; Emotion = Use of emotional social support; Accept = Acceptance; Focus = Focus on and venting of emotions; Instrum. = Use of instrumental social support; Behav. d. = Behavioural disengagement; Active = Active coping; Suppress = Suppression of competing activities; Substance = Substance Use.

* $p < .05$, ** $p < .01$, *** $p < .0005$ (the last alpha level includes the Bonferroni correction for the number of correlations calculated).

APPENDIX K

Bivariate Relationships with Prose Literacy Level

Bivariate relationships of potential co-variates with prose literacy score

For all the relationships outlined below, prose literacy score at time two was not normally distributed. However, transformation would have made interpretation difficult, therefore, all analyses below are conducted on the untransformed literacy score at time two.

Health and prose literacy score

The directionality of the proposed relationship between health and literacy levels is unclear; however, health information was collected to explore if reported health issues were related to prose literacy score.

A point-biserial correlation was used to explore the relationship of health (dichotomous variable with values of ‘present’ or ‘not present’) and prose literacy score at time one and time two. All assumptions were met.

The point-biserial correlation showed no significant association between prose literacy score and health issues at time one, $r_{pb} = .03, p = .84$, or time two, $r_{pb} = .02, p = .90$. Due to the lack of a significant correlation between health issues and prose literacy score with this sample, health was not included in any further analyses.

Level of education

Level of education was a categorical variable with four levels (Lower Secondary, Upper Secondary, Vocational/Trade Qualification, and University Qualification). As only one participant was in the group ‘University Qualification’, the two latter levels were combined to form a ‘Tertiary’ level with an n of six participants. The two former groups had an n of 18 and

31 participants, respectively. Field (2005) suggests collapsing categories with small counts per cell, so the 'Tertiary' group was collapsed into the 'Upper Secondary' group and a subsequent variable developed which included the categories of 'Upper Secondary' ($n = 37$) and 'Lower Secondary' ($n = 18$) only.

A biserial correlation was conducted to determine if a relationship existed between educational level and prose literacy score at time one and time two. At time one, no significant relationship was found, $r_b = .11$, $p = .53$. At time two, educational level and prose literacy score were also not significantly related, $r_b = .30$, $p = .12$.²¹ The moderate effect size seen at time two implies that given a larger sample size, a relationship between educational level and prose literacy score may have been found.

This finding may be due to the restricted range of educational level within this sample (lower secondary and higher only). Previous studies (Culligan et. al., 2004; OECD, 2000) have found a relationship when including participants with primary school education.

Type of course

A point-biserial correlation analysis was conducted to test for a relationship between prose literacy score and type of course. Type of course had three levels (PTE ($n = 29$), Polytechnic ($n = 23$), and University ($n = 3$)). Due to the small number of participants at University level, 'type of course' was recoded into a dichotomous variable (PTE ($n = 29$) and University/Polytechnic ($n = 26$)).

²¹ A correlational analysis was also run with years of formal education and prose literacy score. No significant relationships were found.

At time one, a statistically significant relationship was found between prose literacy score and type of course $r_{pb} = .32, p = .02$. At time two, no statistically significant relationship was found $r_{pb} = .21, p = .16$. The variable ‘type of course’ was included in the multiple regression for time one.

Language

The potential impact of language use on prose literacy score was explored. Prose literacy was measured in English only in this study and therefore all participants needed to report English as a first language (spoken from birth) to participate in the project. Four participants noted they had spoken English from birth in addition to a second language. Thus, a point-biserial correlation analysis was proposed to test for a relationship between prose literacy score and language at time one and time two (defined as either English as a language spoken from birth, or English and another language spoken from birth).

At time one, no significant relationship was found between prose literacy score and the language variable, $r_{pb} = .05, p = .71$. At time two, no significant relationship was found $r_{pb} = .05, p = .73$. The variable ‘language’ was not included in the multiple regression for time one or time two.

The length of time participants had been in the course before their first literacy assessment

As class tutors were the initial contact point for students for an invitation to participate in the study, respondents had usually been in their course for a period of time before an approach was made (this was a deliberate act on the part of the tutors who wished to build rapport with students before approaching them to participate). In the case of two participants who were completing an apprenticeship, an approach was made in the final year of their three-year

apprenticeship. Therefore, an analysis of any influence on prose literacy score related to time in the course before the first interview/assessment was necessary.

‘Time in the course before the first interview’ was dichotomised as it did not meet the assumption of normality. A biserial correlation coefficient was calculated to determine the relationship between these two variables. There was no significant relationship between ‘time in the course before the first interview’ and ‘prose literacy score’ at time one, $r_b = .12$, $p = .49$, or time two, $r_b = .02$, $p = .93$. The ‘time before the first interview’ variable was therefore not included in the multiple regression analyses.

The number of days between the first and second prose literacy assessments on prose literacy score at time two

The length of time between the first and second prose literacy measurement was proposed as a potential influencing variable on prose literacy score at time two. Length of time between the first and second prose literacy assessments violated the assumption of normality and no transformation was successful in allowing the data to meet this assumption. Therefore the variable was dichotomised.

At time two, no statistically significant relationship was found between the time factor and prose literacy score, $r_b = .13$, $p = .51$. The variable ‘time between first and second literacy assessment’ was not included in the multiple regression for time two.

The overall time in the course on prose literacy score at time two

Overall time in the course was defined as the number of days from when the participant started the course until they left the course or the course ended. This variable violated the normality

assumption; however, no transformation of the data allowed them to meet the assumption. Hence, it was dichotomised.

At time two, no statistically significant relationship was found between the overall length of time in the course and prose literacy score of respondents, $r_b = .25$, $p = .18$. The variable 'overall time in course' was not included in the multiple regression for time two.