Student-teacher Distress: Perceived Prevalence of Psychological Distress among Final Year Primary School Student-teachers, and Associations between the Internship Demands and Student-teachers’ Coping Strategies and Resources

Sallie Gardner

BA, GradDipEd, PGradDipScCouns, MEd

School of Education and Professional Studies
Arts, Education and Law
Griffith University

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Abstract

Teaching is stressful. Professional demands may impact on well-being and contribute to psychological distress, and attrition among student-teachers and beginning teachers. For student-teachers, already challenged by their final year of teacher preparation, the Internship may be similarly demanding. Psychological distress, one of the world’s most prevalent mental health disorders among the general adult population, has been widely studied, and found to be even greater, in university medical, health and law students. There is substantial literature about stress on teachers, and the impact of the practicum on early childhood teachers and secondary-school student-teachers, but few, if any, studies report on psychological distress, the Internship, and coping strategies of primary school student-teachers.

The purpose of this exploratory study was to investigate primary school student-teachers’ psychological distress prior to, and during their 6-week Internship. Moreover, in order to extrapolate information on how best to address their psychological distress, and to identify strategies which may be pertinent to future teacher education curricula, a second purpose of the study was to examine coping strategies, and professional resources used by a sample of Australian primary-school student-teachers to manage their personal and professional stress.

Participants were 105 (74%) of the available 145 fourth-year undergraduate Bachelor of Education student-teachers at a Queensland University. The theoretical framework developed for this study was drawn primarily from two theories, the Job Demands-Resources (JD-R) theory and the Teacher Stress Cycle (TSC) theory. The two theories, together with cognitive behaviour therapy (CBT) and mindfulness practices, were amalgamated into the Demands, Coping and Well-being (DC-W) theoretical framework developed for this study.
Using a mixed methods design, quantitative and qualitative student-teacher well-being data were collected from questionnaires and Cluster Group meetings held by the Internship Convenor with student teachers during their six-week Internship. The main outcome variable in questionnaires, used to measure psychological distress, was the Depression, Anxiety and Stress Scale (DASS21). Items from standardised instruments, the Ten Item Personality Inventory (TIPI), the Alcohol Use Disorder Identification Test (AUDIT), the Pearlin-Schooler Mastery Scale (PSMS) and Brief COPE were also included. A 22-item Personal Coping Scale (PCS) incorporated strategies from Cognitive Behavioural Therapy (CBT) and mindfulness, and a 10-item Professional Resources Scale included items about using medical practitioners and allied health providers as resources. Consistent with scales created for other studies among student-teachers, a 12-item Professional Demands Scale was also developed, and included in the questionnaires, which were administered on three occasions, to provide baseline, pre- and post-Internship data. Qualitative data were obtained from responses given in the questionnaires, and from Cluster Group meetings held during the Internship.

Student-teachers’ psychological distress was not specific to the Internship program, because some were already depressed, anxious and stressed at the beginning of their fourth and final year of a Bachelor of Education Degree. Whilst most student-teachers’ levels of depression, anxiety and stress were within the normal range, nevertheless, some student-teachers were mildly, or moderately, depressed, anxious and stressed, and 2.8% were severely anxious.

Personal responsibilities and worry about their Internship performance contributed to their psychological distress. This distress increased prior to their Internship. Student-teachers were concerned at being unable to continue paid work during their Internship, and their teaching employment prospects, and there was some reluctance to reveal psychological distress or draw attention by seeking support for their mental health and well-being.
The majority of student-teachers were in their early twenties and lived at home. To cope with their psychological distress, they sought comfort from within the family, exercised, sought emotional release with friends, through religion, and support via the internet. Some student-teachers used alcohol and negative coping strategies, including disengagement and avoidance, which were linked to depression.

Student-teachers used few coping strategies and professional resources to manage their Internship demands, however, professional support, including assistance from medical and allied health service providers, did contribute to decreased anxiety. Student-teachers were very positive about their Mentor Teachers’ support and their Internship experiences, and psychological distress was reduced in those student-teachers who returned the post Internship questionnaires. Cognitive behaviour and mindfulness-based strategies also were related to reduced levels of post-Internship stress.

Whilst it was possible, from the data, to distinguish some coping strategies student-teachers used to manage their psychological distress, it was not possible to distinguish the contribution of extroversion, conscientiousness or neurotic personality characteristics, or their lack of mastery to their psychological distress. The factors created following exploratory factor analyses may misrepresent the true relationships between variables. High rates of attrition in the post-Internship data may further limit the extent to which the quantitative findings can be generalised to other student-teacher populations.

Nevertheless, the expected increase in psychological distress among the population, which includes student-teachers, their lack of emphasis on coping strategies, and the known rates of attrition among beginning teachers, constitute potentially serious results for future of teacher education. The outcomes from this study indicate that to effectively retain the beginning teachers, and to provide for the continuing well-being of student-teachers as they enter the profession, pre-Internship well-being programs, incorporating mindfulness and cognitive behaviour, could be incorporated into the teacher-education curriculum.
This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Sallie Gardner

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Chapter 1 Introduction

The broad research question addressed in the thesis is:

To what extent do primary school student-teachers experience psychological distress prior to, and during their six-week Internship, and are student-teachers’ personality, personal and/or professional responsibilities and their use of coping resources associated with their psychological distress?

In the fourth year of a primary school education degree, some Australian university students undertake an intense period of practice teaching, working in schools under the guidance of a Mentor Teacher. Known as an Internship, this practice teaching experience prepares student-teachers for a future career working in school as teachers. At this time student-teachers are particularly vulnerable. Being at university is stressful enough but the incidence of psychological distress, which is one of the world’s most prevalent mental health disorders among the general adult population, has been found to be even greater among university students, and this includes those training to enter the teaching profession (Murray-Harvey, Slee, Lawson, Silins, Banfield et al., 2000). If the quality of the teachers in the classroom is to be enhanced, university teacher educators need to understand the health, including mental health, needs and behaviours of those students who are training to be teachers.

Student-teachers require coping strategies to manage their personal well-being in the face of the potentially stressful professional demands of the Internship including time management, the workload, school student behaviour management, learning new curriculum and the achievement of a high rating (in Queensland this is called S1) from the supervising teacher, who is also their mentor. But when student-teachers are stressed by these demands, they may become too exhausted to access their usual coping resources, or they may be fearful of seeking professional help, lest it be interpreted
negatively by their University Internship Convenor or Mentor Teacher at a time when they are keen to make the best positive impression, prior to being assessed by them.

Few studies have been found in the literature about the prevalence of psychological distress or the impact on the well-being of university students who are training to become teachers. No studies have been conducted to address the impact of psychological distress that is associated with the demands on primary school student-teachers or links to their individual personality and mastery factors. In particular, no literature has been found to explain whether or not the professional demands of their Internship impacts on primary school student-teachers. Further, the literature is devoid of studies which identify primary school student-teachers’ personal or professional coping strategies and resources.

This chapter provides an outline of the research by introducing the research problem, providing the context of that problem, outlining the rationale for the study, the specific research questions and the background to them, and, finally, an outline of the subsequent thesis chapters.

1.1 Context of the Problem

Psychological distress has been defined as a unique, discomforting, emotional state experienced by an individual in response to a specific stressor or demand(s) that results in harm, either temporary or permanent, to the person (Ridner, 2004). Levels of psychological distress are reportedly greater among university students in various university faculties world-wide than among the general population.

Serious mental health problems have been associated with psychological distress among university students (Akvardar, Demiral, Ergor, & Ergor, 2004; Garlow, Rosenberg, Moore, Haas, Koestner et al., 2008). They experience high levels of stress and anxiety associated with academic study and workload, and other demands such as
financial and career expectations, but may be afraid that any attention on their mental health issues could result in stigma toward them by academic staff, and potential employment authorities (Barney, Griffiths, Jorm, & Christensen, 2006).

It is widely recognised that teaching is a stressful profession. By identifying those teachers who are more likely to suffer work-related stress, programs can be implemented to support them (Jepson & Forrest, 2006). For example, workshops throughout Australia, such as “Managing Teacher Stress” by Rogers (2009), have been conducted to provide teachers with support in response to the demands in education and schooling today.

Teachers may be taught strategies to manage challenging behaviour, their time, interpersonal relationships, and how to cope with these and other organisational issues in these well-being programs (Rogers, 2009). Similarly, if universities are able to identify individuals who are more likely to be psychologically distressed, and/or who may be expected to suffer more distress during their Practice Teaching Internship, they can thus determine those who need to be better supported. This is the premise of this thesis.

Programs may be implemented to train at-risk student-teachers to develop more effective coping strategies, which are adaptive to the professional demands and pressures of the teaching profession. These strategies may include individual cognitions, social connectedness and other self-help strategies, in conjunction with resources provided in the community by the health system, or at universities, to enable those student-teachers who are distressed to manage their distress more effectively.

1.2 Rationale for this Study

There is ample research about the prevalence of psychological distress in the community and among university students, the contribution of personality factors and
positive coping strategies and resources on well-being, and the poorer psychological outcomes predicted by negative coping strategies (Parker & Martin, 2008). What is less well known is the prevalence of psychological distress among student-teachers, the impact of the demands in their lives, including their Internship, and their coping strategies and resources.

1.2.1 Serious implications of Psychological Distress

People world-wide are exposed to stress-inducing factors which contribute to their psychological distress, which is measured as levels of anxiety, depression, and stress, and also alcohol disorders and suicidal behaviour (Parker & Fletcher, 2007; WHO, 2005). Students in various university faculties have also reported high levels of psychological distress, which includes anxiety and depression, and constitutes a serious health concern for those affected. Stress has been found to be predictive of anxiety and depression, and all three conditions are synonymous with psychological distress (Morrison & O'Connor, 2005).

1.2.2 Student-Teachers may be Psychologically Distressed by Personal Demands

A large body of research exists within the fields of health and occupational psychology on the relationships between stressors among university students and psychological distress (Eisenberg, Gollust, Golberstein, & Hefner, 2007; Khawaja & Dempsey, 2007; Williams, Arnold, & Mills, 2005), and occupational stress and physical health of teachers (Guglielmi & Tatrow, 1998; Schonfeld, 2000). However, elevated anxiety or depression levels among university students may not necessarily be linked to academic performance (Helmers, Danoff, Steinert, Leyton, & Young, 1997), or to the practices of teaching (Campbell & Uusimaki, 2006).

A significant proportion (42%) of Aberdeen university students in the UK reported that financial stress accounted for more than 50% of their entire stress (Ross,
Cleland, & Macleod, 2006). Of those, 34% also thought that worrying about money affected their studies and university students stressed by financial debt were likely to under-perform. Student-teachers may also be concerned about their financial debts, and they may worry that they are unable to be employed while undertaking their Internship.

Psychologically distressed student-teachers’ well-being may be compromised during their teaching practice as this profession known for its stress (Kyriacou, 2001), and this may lead to emotional exhaustion (Santavirta, Solovieva, & Theorell, 2007). The contribution of the Internship teaching and other demands on the health of university students who are studying to become teachers is largely unknown.

1.2.3 Practice Teaching Internship may elevate Psychological Distress

Teaching is increasingly a highly complex profession, requiring responses to burgeoning curriculum requirements, technology and societal changes. Factors that may add to levels of distress among student-teachers at university include their workload, the requirement to understand the demands of the profession, educational theories and other expectations within the field of education made by their lecturers and in their practice teaching school environments, university examinations and career development. Australian student-teachers regard the teaching Practicum as a valued aspect of their teacher education, but also consider the role, relationships and responsibilities of teaching most stressful (Murray-Harvey, Slee, Lawson, Silins, Banfield & Russell, 2000).

Student-teachers may also have to manage the mental health issues of the school students they teach during their Internship, and/or be required to participate in delivery of programs for these students. Yet student-teachers may be less aware of their own mental health issues, particularly when immersed in the professional
challenges associated with their pre-service teaching through preparation for their Internship.

Whilst psychological distress may seriously affect adults world-wide, there is a belief in our contemporary society that high levels of stress and anxiety are normal for doctors and teachers (Wong, Cheung, Chan, Ma, & Tang, 2006). Australian university students in their fourth and final year of studying for their Bachelor of Education degree may negatively experience the demands of their Practice Teaching Internship (Murray-Harvey et al., 2000).

The impact of psychological distress, when associated with the professional demands of teaching, may include diminished performance (Maslach, Schaufeli, & Leiter, 2001), long-term absence due to illness (Bultmann, Huibers, Van Amelsvoort, Kant, Kasl et al., 2005), or attrition from the teaching profession altogether (Pillay, Goddard & Wilss, 2005). Although it is known that practicum stress is predictive of psychological distress in secondary school student-teachers (Chaplain, 2008), studies with university students (Chew-Graham, Rogers, & Yassin, 2003) and student-teachers (Campbell & Uusimaki, 2006), studies also indicate that university students have been reluctant to obtain professional treatment for mental health issues (Barney et al., 2006).

1.2.4 Coping Strategies and Resources may reduce Psychological Distress

Student-teachers’ psychological distress can be reduced by coping strategies. Conversely, it may be exacerbated by their limited use of coping strategies, a lack of awareness of available health resources, and the non-existence of stress management programs within teacher education. University students use a variety of strategies, and access differing resources, to manage the impact of their distress (Flowers, 2005; Givens & Tjia, 2002). Active coping strategies commonly used by university medical students, include more positively viewing the situation, reframing their
thoughts or cognitions, accepting the situation rather than fighting it, and distracting oneself, thereby preventing time spent ruminating or dwelling on a negative experience (Sreeramareddy, Shankar, Binu, Mukhopadhyay, Ray et al., 2007).

Emotional support was also used as a coping strategy by these students.

More than 40 years ago Beck (2005) introduced cognitive and behavioural techniques, known collectively as cognitive behaviour therapy (CBT). There is now a significant body of evidence that CBT strategies, usually delivered by mental health professionals, are effective for the management of psychological distress (Hunot, Churchill, Silva de Lima, & Teixeira, 2007).

During their Internship, student-teachers have to move from their role of student to professional. As teachers, they are responsible for engaging children, by providing appropriate learning opportunities, and managing children’s behaviour, which is stressful even for seasoned teachers. Programs such as the West Australian Aussie Optimism Program (Roberts, 2006) provided an approach to improve mental health outcomes for students from primary school through to high school, and strategies to deal with their transition from school into the workforce or further tertiary study. The result showed an association with reduced anxiety, depression suicidal thinking and behavior and drug use among the student participants. Elements of the program, including cognitive skills training, and social skills enhancement, although provided to children from 10 years of age, were also suited to adults, and were offered as a self-directed program to parents. Teachers and student-teachers, who may or may not have access to such programs may themselves also be subject to distress.

This study aims to add to scientific knowledge through an exploration of the associations between student-teachers’ personal and professional demands with their psychological distress, to discern whether it might be ameliorated by their personal
coping strategies and professional resources available to them, and by discovering if there are barriers that prevent them from seeking help. It also aims to generate new knowledge by providing an estimate of the prevalence of psychological distress among student-teachers before they transition to a stressful profession.

If student-teachers are to recognise and manage their emotions, and cope effectively with the demands of their Internship, they require opportunities for appropriate skill development (Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010). Thus the results from this study may suggest directions for stress management programs, including evidence-based self-help skill building programs, and psycho-education and supervision training for support staff, school mentor teachers and university convenors, which could be incorporated into future Primary School teacher education university planning and curricula.

1.3 The Broad Research Question and its Seven Specific Research Questions

The literature has been reviewed to generate the broad research question and its seven specific research questions, which are:

1. What is the extent of psychological distress experienced by contemporary final year Australian primary school student-teachers?

2. Are primary school student-teachers’ personality characteristics associated with the psychological distress they experience?

3. What personal demands do primary school student-teachers experience?

4. What professional demands do primary school student-teachers associate with their Internship?

5. What coping strategies and resources do individual primary school student-teachers use?

6. What barriers may preclude final year primary school student-teachers
from seeking help for their psychological distress?

7. What relationships exist between the demands of the Internship, student-teacher’s personal and professional coping strategies and/or psychological distress?

1.4 Background to the questions of this study

Psychological distress can be serious for those who are affected, and studies indicate it may result in suffering and increased mortality in the general population (Cuijpers, Smit & van Straten, 2007). Research among the general population indicates that psychological distress, containing depression, is one of the world’s most widespread mental disorders (WHO, 2001).

Studies reveal the prevalence and significance among undergraduate university students, such as dental students (Humphris et al.,). The literature also refers to the psychological distress experienced by early childhood teachers (Sumison & Thomas, 1999), secondary-school student-teachers (Chaplin, 2008), and emotionally exhausted, burnt out, prematurely retired teachers (Unterbrink, Hack, Pfeifer, Buhl-Grießhaber, Müller et al., 2007), but not primary school student-teachers. An ontological position (Grix, 2002), being that psychological distress has serious implications for the sufferer, lies beneath the question posed by this research, namely, what is known of Australian primary school student-teachers’ psychological distress.

Some student-teachers are required to undertake a six week Internship, which has been found stressful (Power & Berlach, 2005), and psychological distress may lead to attrition from teaching (Santavirta, Solovieva & Theorell, 2007). Therefore, this thesis is designed to obtain quantitative data about Australian primary school student-teachers and by using mixed methods (Cresswell, 2008) qualitative data will deepen the contribution of the findings (Mackenzie & Knipe, 2006).
1.4.1 Psychological Distress and Student-Teachers

Psychological distress research has rarely defined this condition as an isolated concept in the general population, among university students or among student-teachers, but the prevalence of psychological distress, reported in the 2004-05 Australian National Health Survey (NHS), referred to anxiety and mood states (including depression), alcohol and drug use (ABS, 2006). That report indicated that 13% of Australians at that time were psychologically distressed. Within that group, 45% of people had depressed mood and anxiety problems. The data included in the report revealed an increase in psychological distress between 1997 and 2001. The greatest increases were among people aged 18-24 years, and females aged 35 years and over. In that study, the mean age of onset of psychological distress was 30 years.

The average age of undergraduate university students has been found to be 18-23 years (Martin-Agueda, Lopez-Munoz, Silva, Garcia-Garcia, Rubio et al., 2007). As found in the Ministerial Council on Education Employment Training and Youth report (2004), the teaching profession attracts primarily young Australians in the same, or similar, age group. Student-teachers are also likely to be female as 79.1% of all Australia primary teachers in that report were also female (Owen, Kos, & McKenzie, 2008). Thus student-teachers are in a high risk age and gender group for depression.

The Australian university students sampled for this thesis are in their fourth year of a primary school Education university degree (B. Ed, Bachelor of Education). These student-teachers engage in the real world experience of the teaching profession. They undertake short periods of Practice Teaching in their third year of teacher training, then a more intense period of supervised Practice Teaching in a
primary school at the conclusion of their academic studies. The latter is referred to as an Internship.

It is has long been known that stress levels among practising teachers are high. Kyriacou (2001) reported that 37% of UK teachers were stressed. Tuettelmann (1992) revealed that 45% of Western Australian secondary teachers reported psychological distress. They attributed their psychological distress to their teaching, and it was associated with the extent to which those teachers perceived themselves to be effective, to be supported, and whether or not they were given recognition for their efforts (Tuettelmann & Punch, 1992).

1.4.2 Psychological Distress and Student-Teachers’ Personality

Personality traits have been linked to anxiety and depression. In a study with medical doctors, individuals who were most stressed, emotionally exhausted, and introverted were more prone to anxiety and neuroticism (McManus, Keeling, & Paice, 2004). They also exhibited lower levels of conscientiousness, whereas extroversion and overall career satisfaction was associated with lower levels of neuroticism. These emotional responses can be automatic, genetically-determined and personality-related (Jiang, Sato, Hara, Takedomi, Ozaki & Yamada, 2003). However, emotional responses have also been found to be more related to environment than heredity (Magnavita, 2004.).

One feature of personality, namely neuroticism, was found to predict anxiety and depression in the general population (Jorm et al., 2000). Another feature, conscientiousness, the personality characteristics associated with setting high standards, may also impact on depression and anxiety in the general population (Bagby, 2008). This association between high personal standards, or conscientiousness and psychological distress was also found among university
students (Matsudaira & Kitamura, 2006; Van Yperen & Hagedoorn, 2008). Further, although academic variables differ between groups, psychological distress (depression, hopelessness and suicidal ideation) was correlated with neuroticism and conscientiousness among university students from both Arts and Medical faculties (Enns, Cox, Sareen, & Freeman, 2001). However, studies have not been found in the literature to indicate links between the impact of personality and the psychological distress of student-teachers.

Internationally and nationally, university students’ personality characteristics, including their perceptions that they do not reach the high standards they set for themselves, have also been associated with anxiety, and/or depression (Matsudaira & Kitamura, 2006; Van Yperen & Hagedoorn, 2008). Personality characteristics were also found to be associated with the psychological distress of Australian teachers (Wilhelm, , Mitchell, Slade, Brownhill & Andrews, 2003).

For some student-teachers, the Internship may be a negative emotional experience, triggered by their perception that their teaching constitutes a threat to their self-esteem and wellbeing. Most teachers experience self-doubt and disenchantment, but how much this impacts on them will depend on their personality, their circumstances and how competent they perceive themselves to be (Kyriacou, 2001).

In a study of the relationship between burnout and competence among mid-career teachers in primary and secondary schools in Queensland, Pillay, Goddard, and Wilss (2005) found that perceptions of competence, or mastery, may act to provide a positive buffer against the impact of stress experienced by teachers. As the authors outlined, competent teachers were more likely to attribute behaviour to the school students (Pillay et al., 2005). Thus they did not blame themselves for student’s misbehaviour.
1.4.3 Personal Demands on Student Teachers

Certain risk factors other than personality, mastery or academic stressors may predispose university students to psychological distress. These include substance abuse, having a family history of depression and anxiety, and having lost a relative in the last year (Khan, Mahmood, Badshah, Ali, & Jamal, 2006). Feeling run down, overworked, sleeping poorly and having less time and energy for one’s personal life may have a negative effect on health (Bruce, Thomas, & Yates, 2003). Worry about their finances, future career prospects, and lack of coping resources may also increase anxiety (Bolanowski, 2005).

Elevated anxiety or depression levels among university students and student-teachers may be linked to academic performance (Helmers et al., 1997), their perceptions that they do not reach the high standards they set for themselves (Matsudaira & Kitamura, 2006; Van Yperen & Hagedoorn, 2008) and personality characteristics, as associated with the psychological distress of Australian teachers (Wilhelm et al., 2003). World-wide, people continue to be exposed to stress-inducing factors which contribute to their psychological distress which constitutes a serious health concern for those affected and often for their peers and families.

Student-teachers in pre-service training at universities are concerned about both personal and professional issues, including feeling challenged by their performance at their Internship, the academic workload, being evaluated, finding a balance between personal and professional commitments, time management and enforcing discipline among school students (Murray-Harvey, Slee, Lawson, Silins, Banfield, & Russell, 2000).
1.4.4 Professional Demands on Student Teachers

Stress has been found to be associated with the demands of teaching. Murray-Harvey, Silins, and Saebel (1999) found Practicum-related and academic stressors impacted on Australian student-teachers, and the authors suggested that those professional demands could also impact on their psychological distress. In a more recent study in the UK, it was also found that Practicum stress was predictive of psychological distress in secondary school student-teachers (Chaplain, 2008).

Regardless of the teaching demands of the Internship, student-teachers may already have high levels of pre-existing psychological distress, although this may be unrecognised. The stresses associated with their Internship, or individual student-teachers’ personality characteristics, as described above (Jorm, Christensen, Henderson, Jacomb, Korten & Rodgers, 2000), may further exacerbate their distress and stress may result in attrition among student-teachers. The demands of teaching in general, (Kyriacou, 2001), or those associated with certain subjects in particular, such as Mathematics (Bibby, 2002), may contribute to stress, and in turn, it can be predictive of psychological distress (Morrison & O'Connor, 2005).

Primary and Secondary school teachers are experiencing increasing levels of attrition, stress and burnout (O'Brien, O'Keeffe, & Goddard, 2007). The Organisation for Economic Co-operation and Development (OECD) and the Australian Government expressed concern about retaining teachers within the classroom (Stevens, Parker, & Burroughs, 2007). This concern was justified by a longitudinal study with Australian teachers which revealed that attrition rates for teachers in their first years of teaching are high, with one study revealing that 74% of teachers left within their first five years (Wilhelm, Dewhurst-Savellis, & Parker, 2000). More recently, Hartsuyker (2007) also found that, in Australia, one out of
every four beginning teachers had left during the first five years. That inquiry into teacher education reported that, as there is a high rate of attrition among beginning teachers, high quality school placements for Professional Experience should be a critical component of teacher education (Hartsuyker, 2007).

1.5 Student-Teachers’ Coping Strategies and Resources

Evidence-based strategies found to be effective in the management of psychological distress include aspects of cognitive approaches, which may be used by individuals and accessed as self-help, or incorporated into programs provided by university faculties and in schools (Haby, Donnelly, Corry, & Vos, 2006; Kaltenthaler, Brazier, De Nigris, Tumur, Ferriter et al., 2006). There is evidence that suggests that self-help materials based on Cognitive Behavior Therapy (CBT), which may be found in books or internet-based programs, are useful for some people, particularly when accompanied by additional guidance (Andersson & Carlbring, 2003; Zetterqvist, Maanmies, Strom, & Andersson, 2003). In recent years, many websites have been developed which offer individuals access to CBT materials, and, as they are proven effective, medical practitioners may also refer their patients to such programs (Usher, 2007; Valaitis, 2004).

There is also evidence that exercise is effective as a coping technique for the management psychological distress (Lawlor & Hopker, 2001). There are some people who use passive, in contrast to active, coping strategies in an attempt to avoid the impact of the stressful situation. For example, rather than take some action to manage an adverse situation or to manage their feelings of distress, some teachers are simply resigned to adverse situations, rely on wishful thinking, simply hoping that the situation would change without requiring them to do anything so they take no action other than accepting whatever happens (Montgomery & Rupp, 2005).
It is important to determine if student-teachers have adequate coping resources (Bakker, Demerouti, & Euwema, 2005) to manage the demands of the teaching profession (Guglielmi & Tatrow, 1998), as there may be serious consequences if their psychological distress is unrecognised. University students, including student-teachers, may also use alcohol in an attempt to blank out responding, thus avoiding, as least in the short-term, having to face the situation. Between 2004 and 2005 there were 45% of Australians aged between 20-24 years who drank “at risky levels once or more a month” (Wyn, 2009, p. 29). This is the age group of most student-teachers (Teo, 2008). The drinking behaviour of young Australians has been linked to psychological distress in the general population, and in particular, depressive symptoms in young adults can be further complicated by alcohol abuse (Flynn, 2000; Hickie, 2004; Kumar & Basu, 2000; Newbury-Birch, Lowry, & Kamali, 2002; Pickard, Bates, Dorian, Greig, & Saint, 2000; Prince, Patel, Saxena, Maj, Maselkp & Phillips, 2007).

It is usual that psychological distress is first evident during adolescence, but it is also usual that it remains untreated until the young person reaches adulthood, by which time s/he may be abusing alcohol or other substances in order to manage anxiety and/or depressed mood (Hickie, 2004). Thus the mental disorders now accounting for “60% of all disability costs in those aged 15-34 years” (Wyn, 2009, p. 1) may be, in part, due to an association between the use of alcohol and psychological distress. Therefore, that association between psychological distress and using alcohol daily to cope with stress, as found among university students (Flynn, 2000), may also be found among student-teachers.

Sufficient adaptive coping strategies are required if student-teachers are to manage their personal well-being in the face of the potentially stressful professional
demands of the Internship workload, school student behaviour, staff relationships, and the effort to achieve a high rating from the supervising teacher. Student-teachers who suffer from psychological distress may have limited personal coping resources (den Boer, Wiersma, & Van den Bosch, 2004). Those student-teachers who do have active coping resources may be too exhausted and stressed by the demands as described, to access their usual strategies (Montgomery & Rupp, 2005).

Strategies and programs for managing university students’ psychological distress are provided in several Health faculties’ curricula (Redwood & Pollack, 2007; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003). In university faculties where various stress management programs, including Mindfulness Based Cognitive Therapy (MCBT) had been introduced, students’ psychological distress was reduced and their well-being increased (Collard, Avny, & Boniwell, 2008).

The findings from a pilot study of a stress management program provided to early childhood student-teachers in Australia revealed mixed results with regard to psychological distress reduction (Sumsion & Thomas, 1999). In that study, the quantitative survey results showed that the relaxation-based intervention made no difference to levels of psychological distress measures taken pre and post Practicum. However, after the intervention, student-teachers also engaged in group discussions, and, contrary to the survey results, they reportedly felt that their psychological distress had been reduced. They attributed these feelings to the relaxation-based intervention taught in the program.

A report exploring the experiences of teachers and student-teachers compiled by the federal Department of Education, Science and Training (2002) identified that at least 20% of beginning teachers felt under-prepared to begin their careers, and 25% of supervisors felt that beginning teachers were not adequately prepared to meet the
challenging demands of teaching. The Department cited lack of accurate expectations concerning what teaching would be like and what it would involve, as well as teachers’ lack of psychological self-management skills to adapt to, and cope with, their role as a teacher.

Support by supervising teachers has been considered an important element of the school Practicum. However, universities may have little control over who supervises the student-teachers during their school Practicum. In order to prepare the student-teachers effectively, the Department of Education, Science and Training (2002) report suggested that universities should provide on-going support to supervising teachers, and have clear, specific preparation processes for supervisors.

Whilst universities may provide on-site access to free counselling services, student-teachers who recognise being psychologically distressed may be fearful of seeking help, lest it be interpreted negatively by potential employing authorities associated with university or the schools where they complete their Internships, at a time when they are keen to make the best possible impression. Others may not recognize the need for help, or feel unable to seek professional support, due to their fears about confidentiality (Chew-Graham et al., 2003).

1.5.1 Barriers to Seeking Help for Psychological Distress

In contemporary society, there is a commonly held view that it is normal for medical doctors and teachers to have high levels of stress and anxiety (Wong, 2006). However, psychological distress, experienced as depression and anxiety, can be debilitating for the sufferer (Dahlin & Runeson, 2007). It may be unrecognized, therefore untreated, despite the potential impact on an individual. Even when university students and student-teachers recognise their psychological distress, they may not discuss it, due to feelings of shame, peer pressure, or a negative belief about
society’s views surrounding mental health issues (Campbell & Uusimaki, 2006; Garlow et al., 2008). They may also be constrained by time factors, and the financial costs associated with counselling. Thus, whilst psychological distress is expected to increase in the general Australian population and elsewhere, among university students and student-teachers, it may go untreated, due to their disinclination to inquire about professional help (Barney et al., 2006).

1.5.2 Relationships between the Demands of the Internship, student-teachers’ Personal and Professional Coping Strategies and their Psychological Distress

Psychological distress impacts adversely on individuals (Dyrbye, Thomas & Shanafelt, 2006). Mild depression which may be first experienced in adolescence but remain untreated even in adulthood has a considerable impact on people’s quality of life, and the symptoms of major depression are serious, with extreme cases resulting in death (Cuijpers et al., 2007; Hickie, 2004).

Among university students and student-teachers, elevated anxiety or depression levels may not necessarily be linked to academic performance (Helmers et al., 1997), or teaching (Campbell & Uusimaki, 2006).

World-wide, people are exposed to stress-inducing factors which contribute to their psychological distress, as measured by their levels of anxiety, depression, stress, alcohol disorders and suicidal behaviour (Parker & Fletcher, 2007; WHO, 2005). High levels of psychological distress among students in various university faculties constitute a serious health concern for those affected and often for their peers and families. The demands of teaching in general, (Kyriacou, 2001), or those associated with certain subjects in particular, such as Mathematics (Bibby, 2002), may
contribute to stress, and in turn, it can be predictive of psychological distress (Morrison & O'Connor, 2005).

When psychological distress is associated with the professional demands of teaching, the impact may result in diminished performance (Maslach et al., 2001). In Australia, psychological distress has been associated with teacher attrition (Pillay et al., 2005), and it is a risk factor for the onset of sick-leave and long-term absence from work (Bultmann et al., 2005). Practicum-related and academic stressors impacted on Australian student-teachers (Murray-Harvey, Silins, & Saebel, 1999) and in the UK, Practicum stress was predictive of psychological distress in secondary school student-teachers (Chaplain, 2008). However, as university students and student-teachers may hesitate to draw attention to the state of their mental health (Campbell & Uusimaki, 2006; Chew-Graham, Rogers & Yassin, 2003), psychological distress among student-teachers, which may be exacerbated due to the Internship, may remain unrecognized, and/or untreated.

Psychologically distressed student-teachers may be fearful of acknowledging depression, anxiety or stress in case it impacts adversely on their professional future. They may believe that they cannot seek help for a mental health condition, because this may impact negatively on their likelihood of obtaining positive feedback from their Internship supervisor. Psychological distress may also be perceived to negatively influence teaching authorities, such as the Queensland College of Teachers, which is responsible for registration of teachers and decisions about the school employment and placement of student-teachers upon registration (Queensland College of Teachers, 2007). Thus, acknowledgement of psychological distress may be seen to subsequently restrict gaining professional employment as a teacher.
Whilst the school teaching role is increasingly complex and demanding, providing high quality teachers is critical (McKinsey & Company, 2010). In their report of teacher education, those authors suggest various reforms which could be adopted by US education authorities, at a systemic level, in order to better equip educators, and improve educational outcomes. These include changes in recruitment and training of teachers, but the authors acknowledged that there is no “silver bullet” (McKinsey & Company, 2010, p. 5).

The outcome of consultations to determine an appropriate Australian national system for the accreditation of pre-service Teacher Education Programs indicates that pre-service teacher education programs will adopt, at a national level, strategies to secure future teacher quality (http://smarterschools.gov.au/Pages/default.aspx.). The “Smarter Schools National Partnership for Improving Teacher Quality” outlines the professional standards expected from student-teachers upon graduation. The emphasis is on the provision of quality teaching to ensure student learning and development, and requirements include ensuring students’ well being. However, no mention is made of training for student-teachers in stress management strategies, nor provision of other resources associated with personal well-being.

1.6 Organisation of this Thesis

Chapter 1, Introduction, provides the broad research question, an outline of the context of the problem, the rationale for the study, the seven specific research questions, an overview of the background to the questions based on past evidence of the prevalence of psychological distress, the personal and/or professional demands on university students, teachers and student-teachers. Coping strategies and resources in general, and in relation to student-teachers’ Practice Teaching Internship, are introduced followed by a final outline of the remaining thesis chapters.
Chapter 2, Definitions for Exploring Psychological Distress and Coping among Student-teachers, provides relevant definitions of the terms used to explore the problem.

Chapter 3, Literature on Psychological Distress, Internship Demands and Coping, includes an extensive literature review of the prevalence of psychological distress among university students, and student-teachers, with a focus on personality characteristics. The impact of psychological distress, particularly on university students, and, where possible, on student-teachers is explored. This chapter also provides a critique of the literature about the common coping strategies used by adults to manage their psychological distress, and the evidence-base for these strategies, many of which are used as self-help. Coping strategies used by university students, and resources available, particularly programs provided by university faculties, are also addressed. Because there are a limited number of studies on psychological distress among student-teachers specifically, relevant research literature of teachers is reviewed in order to clarify the research hypotheses provided in the Method chapter.

Chapter 4, Theories of Demands and Coping with Psychological Distress, provides a description of the Demands, Coping and Well-being theoretical framework developed to epistemologically address the ontological underpinnings of this thesis. It also contains a critique of the Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2007), and the Teacher Stress Cycle (TSC) theory (Mayo-Wilson & Montgomery, 2007), as these are the main theories which are integrated into the new framework.

Chapter 5, Research Design and Method, presents seven hypotheses and provides a clarification of the method and research design used in the study to test these hypotheses. The mixed method study design and the sample are explained. The details of the five standardised measurement instruments, from which the questionnaires were
developed, namely the Depression, Anxiety and Stress Scale (DASS) (Lovibond & Lovibond, 1995), the Ten Item Personality Inventory (TIPI) (Gosling, Rentfrow, & Swann, 2003), the Pearlin Schooler Mastery Scale (PSMS) (Pearlin & Schooler, 1978), the Brief COPE (Carver, Scheier, & Weintraub, 1989) and the Alcohol Use Disorders Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), are provided. This chapter also addresses the method for analysing the data.

Chapter 6, Quantitative Results and Data Analysis, provides the results of the statistical analyses conducted on the quantitative data. Since the instruments incorporated into the three questionnaires elicit responses that are standardised, the interpretation of quantitative data, obtained using the Statistical Package for the Social Sciences (SPSS, vs 17) was used to test the hypotheses. The Data Analysis section provides analyses of these quantitative data. Each of the seven specific research questions and their associated hypotheses is examined using different statistical tests, and linked to the theoretical framework. Graphs and tables are included to provide clear visual summaries of the analytical outcomes.

Chapter 7, Results and Data Analysis of Qualitative Data, provides the results and the analyses from the qualitative data. Open-ended questions, included as a method of probing for further understanding, are thematically analysed, and responses shared by student-teachers at their Internship recorded as field notes, provide qualitative data.

Chapter 8, Discussion, provides a commentary of the quantitative and qualitative findings of this study, and its contribution, by focussing on primary school student-teachers in the Australian state of Queensland to understanding the likely direction of student-teachers’ psychological health and well-being if these trends continue. The statistical and descriptive analyses are reviewed in order to answer the
specific research questions, and discussed in terms of the relationships and applications of each associated hypothesis.

Finally, Chapter 9, Conclusion and Recommendations, whilst acknowledging responses to the broad research question, because of attrition in the student-teacher sample, presents conclusions made in response to the seven questions of this thesis. The chapter also addresses the appropriateness of the research design, validation of the theoretical framework, and the need for replication of the results from this study to other student-teacher populations. The limitations of the study are also examined, and future implications concerning the levels of psychological distress among primary school student-teachers and their Practice Teaching Internship, and their coping behaviours, are explored. The chapter ends with recommendations for teacher education authorities, with regard to student-teachers’ coping strategies and resources, and future research directions.

1.7 Chapter Summary

This chapter has provided an introduction to the topic of psychological distress among student-teachers, contemporary personal demands and responsibilities faced by student-teachers, professional demands associated with their Internship, and their coping strategies and resources. It included a context, a rationale for investigating the broad research question, and identified seven specific research questions.

The contextual background to the research questions provided details of a prevalence study approach to explore the extent of primary school student-teachers’ psychological distress, personality and mastery, demands and the specific coping strategies and resources that use to manage their personal well-being in the face of the potentially stressful professional demands of the Internship. The chapter provided the background for the argument that an analysis of student-teachers’ psychological distress
is an important research topic because their own well-being may influence outcomes for the students in their care, and it laid the foundations for exploring the challenges of the Internship for primary school student-teachers which are expanded in the literature review in Chapter 3. Finally it provided an outline of the thesis as a whole.
Chapter 2 Background to Psychological Distress and Coping

2.1 Background to the Research Project

This chapter introduces the definitions of key terms central to the research questions. It defines prevalence, psychological distress, including depression, anxiety and stress, impact, coping strategies and resources.

2.2 Definitions used in this Thesis

Prior to reviewing the literature, the main concepts of this thesis are defined. These definitions contribute to clarifying complex issues further addressed in this thesis about the prevalence of psychological distress. Other terms discussed include impact, to explain the personal demands on university students, professional demands in the teaching profession, particularly as experienced by student-teachers during their Internship, and coping to explain the strategies and resources which may contribute to student-teachers’ well-being.

2.2.1 Definition of Prevalence

Prevalence may be defined as the total number of cases of a condition that are present in a population at a given time, divided by the number of individuals in that population (www.medterms.com). For example, a questionnaire was administered to a cross section of medical students at a private university in Pakistan, and the reported prevalence of anxiety and depression among the entire cohort in the study was found to be 60% (Inam, Saqib, & Alam, 2003). Thus, because prevalence refers to the number of cases present in a population at a given time, and this research examines the literature on the percentage of student-teachers who have experienced symptoms of psychological distress, relative to the timing of their Internship, it seems most appropriate for this investigation.
Because this research aims to explore levels of psychological distress on three occasions, the term *incidence*, which refers to the number of new cases arising during a specific time period, may also be used. Incidence is defined here as the number of *new* cases arising during a specific time period ([www.medterms.com](http://www.medterms.com)), and may also be used to demonstrate the likelihood, or not, of something occurring. For example, incidence may be the term used to demonstrate the probability that future primary school student-teachers may be affected by the symptoms of psychological distress prior to and during their Internship.

### 2.2.2 Definition of Psychological Distress

Much of the research in this area of psychological distress occurs in the health care professions. In the literature, Ridner (2004) suggests that the term psychological distress refers to a response to illness, and although difficult to define, she states that is embedded within the context of strain, stress, and distress. As long ago as 1956, in early experimental work, Selye (1982) had articulated the term stress. This was explained in a treatise published after his death (Selye, 1982). He subsequently used the term distress to more specifically explain what happened to the body under stress, referring to positive stress as “Eustress”, and negative stress as “Distress”, suggesting that some stress may be advantageous under certain conditions, but that when stress causes harm it is negative, becoming *distress*.

The concept of psychological distress may be understood in terms of what has been broadly defined as emotional problems. It is seldom defined as a distinct concept. Scales such as the general-purpose health scales which have been developed to measure emotional problems typically include questions about elevated cognitions, behaviours, emotions and psycho-physiological symptoms (Kessler, Andrews, Colpe, Hiripi,
Mroczek et al., 2002). For example, in the US a 10-question health measure, the K10, was developed to measure psychological distress (Kessler et al., 2002).

The World Health Organisation (WHO) also used the K10 for determining the prevalence of psychological distress, when conducting World Mental Health Surveys (WHO, 2001). In Australia, in a National Survey of Mental Health and Well-Being (ABS, 2006), the Kessler Scale (K10) was also used to provide an estimate of the prevalence of psychological distress.

Psychological distress has also been measured using many other instruments, predominantly questionnaires and inventories. These include the General Health Questionnaire (GHQ), a tool that has “good reliability and validity when assessing psychological distress in young populations” (Humphris, Blinkhorn, Freeman, Gorter, Hoad-Reddick et al., 2002, p. 24). Others tools are the Spielberger State-Trait Anxiety Inventory (STAI) (Spielberger, 1983), the Beck Depression Inventory (BDI) (Aktekin, Karaman, Senol, Erdem, Erengin et al., 2001), the Maslach Burnout Inventory (MBI)(Humphris et al., 2002), the General Health Questionnaire (GHQ-30) (Goldberg & Williams, 1988), and the self-rating Fatigue Symptom Checklist (FSC) (Jiang, Sato, Hara, Takedomi, Ozaki et al., 2003). These, and similar tools, have formed the basis for questionnaires (Sherina, Rampal, & Kaneson, 2004).

The Zung Depression Scale (ZDS) (Zung, 1965), and the more recently developed self-report questionnaire, the Depression, Anxiety and Stress Scale (DASS) (Lovibond & Lovibond, 2004), have been used alongside established instruments such as the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983), or alone (Campbell, Cumming, & Hughes, 2006) to identify levels and probe symptoms of mental health problems, specifically depression, anxiety and stress. They have also been
used in association with coping instruments such as the Brief COPE inventory (Carver et al., 1989).

Currently, in Australia, either the DASS 21, a shortened version (21 questions) of the complete DASS (42 questions), or the K10 are required by Medicare, the Australian government’s health care scheme, to be completed in the “Initial Formulation to GP by MBS Allied Health Practitioner” (http://www.medicareaustralia.gov.au/public/forms.jsp). These tests provide results for stress, anxiety and depression, thus providing practitioners with an understanding of the patients’ psychological distress, the term used to refer most often to a mental state that incorporates depressed mood and anxiety (Dammeyer & Nunez, 1999; Humphris et al., 2002; Sherina et al., 2004; Wong et al., 2006).

Psychological distress may be experienced as anxiety (Dyrbye, Thomas, & Shanafelt, 2006) and/or depression (Jorm, Christensen, & Griffiths, 2006). The presence of an anxiety disorder is the single biggest clinical risk factor in the development of depression (Hirschfeld, 2001). It is common for both conditions to occur in tandem (Bultmann et al., 2005; Hirschfeld, 2001), and until World War II, American psychologists also used the terms stress and anxiety interchangeably (Dutta, Pyles, & Miederhoff, 2005).

Commonly, the term psychological distress is characterised as a mental state that incorporates anxiety, depressed mood (Dammeyer & Nunez, 1999; Humphris et al., 2002; Sherina et al., 2004; Wong et al., 2006), and stress (Dutta et al., 2005). Whilst psychological distress may be experienced as only anxiety (Dyrbye et al., 2006), or depression (Jorm et al., 2006), most people who have depression are also likely to be anxious (Bultmann et al., 2005). Thus anxiety disorders are either the precursor to depression, or a major part of comorbidity (Hickie, 2004). Parker and
Fletcher (2007) argued that, as the two conditions are so closely intertwined and frequently co-occur, there is little point in distinguishing one condition from the other.

Psychological distress, defined here as a potentially serious condition (Parker & Fletcher, 2007), may contribute adversely to some student-teachers’ well-being. In the literature review in Chapter 3, for clarity, focus, and to provide a clear conceptual framework for the development of the thesis, psychological distress will also include stress. Each of these is now examined.

2.2.2.1 Depression

Depression, like anxiety, can also be described in numerous ways. As used in this thesis, the term refers to self-described depressed mood, diminished interest or pleasure in most activities, disturbances in sleep, fatigue or loss of energy, feelings of worthlessness and/or diminished ability to concentrate. This definition also relies on criteria identified in the DSM-IV-TR (c2000). Within the population who experience psychological distress, there are different levels of severity. According to the DSM-IV, 5-25% of people in the US will experience major depression. Whilst major depression is acute and severe, depression symptoms for the student-teacher may be less overt.

2.2.2.2 Anxiety

Anxiety has been used to describe occasional feelings of uneasiness, or to refer to a condition severe enough to warrant medical intervention (Zwanzger & Deckert, 2007). It is characterised by worrying excessively and experiencing dysfunctional thoughts that interfere with concentration, thus anxiety can affect daily life (Mayo-Wilson & Montgomery, 2007). A vast array of symptoms fall under the heading of anxiety, and it appears to be difficult to establish a global definition (Dammeyer & Nunez, 1999). There has been significant Australian research into aspects of anxiety,
describing this term in the general community (Baillie & Rapee, 2004) but not specifically among student-teachers.

For the purpose of this thesis, anxiety will be viewed as excessive apprehension, difficulty controlling worry, experiencing significant distress in social or occupational areas, feeling restless, concentration difficulties, irritability, muscle tension and/or disturbed sleep. This definition relies on criteria identified in the DSM-IV-TR.

2.2.2.3 Stress

Teacher stress has been defined as the experience of unpleasant, negative emotions, including anger and depression, arising in teachers as a consequence of their work (Kyriacou, 2001). Stress has also been defined in the literature by Lazarus (1993) with reference to cognitive appraisals, including doubts about one’s ability to cope. Both the anecdotal and empirical literature reveals that anxiety and stress rank high among concerns experienced by teachers (McCarthy, Lambert, O'Donnell, & Melendres, 2009) and university students (Orbach, Lindsay, & Grey, 2007; Roy, 2003), and they may also be depressed (Eisenberg et al., 2007). Thus, together, depression, anxiety and stress may be identified as psychological distress.

2.2.3 Definition of Impact

Impact has been defined as an effect (http://encarta.msn.com/dictionary/impact.html). It has been used in an Australia study to explain the effect of factors such as tertiary studies and social difficulties on international university students’ psychological distress (Khawaja & Dempsey, 2007). The impact of psychological distress to be explored in this thesis relates to levels of depression, anxiety and stress, and refers also to aspects associated with personality, and personal and professional demands, particularly where related to the teaching profession.
2.2.4 Definition of Coping

Coping has been defined in the literature by Lazarus (1993) who argues for two approaches to coping, that is, either first “coping as a personality characteristic” (p. 234), which transcends context, or second, an approach that regards coping as a process, requiring effort to manage stress that changes over time, and is therefore shaped by context. He defined this process as “ongoing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing” (p. 237). These demands are assumed to be challenging and may exceed the individual’s usual coping resources, thus resulting in psychological distress (Lazarus, 1993). The process approach, in which coping refers to thoughts and actions usually taken by a person in response to diverse stressful situations, is used here to understand coping in relation to management of psychological distress, in the context of the lives of student-teachers. This includes the association between personality, coping and psychological distress, as considered in 2.3.1.

2.3 Chapter Summary

This chapter has provided definitions which are used in the thesis for exploring psychological distress and the coping strategies of student-teachers. In the following chapter, Chapter 3, two bodies of literature are examined. The first deals with the prevalence of psychological distress among the general population, university students, teachers and, where available, among student-teachers. The second deals with coping strategies and resources among the general population, university students, teachers and, where available, among student-teachers.
Chapter 3 Literature on Psychological Distress, Internship Demands and Coping

3.1 Broad Research Aim

This thesis examines the extent to which primary school student-teachers experience psychological distress prior to, and during their Internship, and whether or not personality, personal and/or professional demands and responsibilities, and use of coping strategies and resources, are associated with their psychological distress.

In this literature review chapter, Part A examines the prevalence of psychological distress world-wide, among university students, among the teaching population and, from what little literature is available, of the prevalence among student-teachers. The literature is drawn from publications over the last 10 years, and used to clarify complex issues addressed in this thesis. Associated themes are examined, as studies relevant to the student-teacher population are critiqued. They include the impact of personal demands on university students, the association between psychological distress and personality, and the impact of professional demands in the teaching profession, particularly as experienced by student-teachers during their Internship.

Part B of the literature review explores the literature that has sought to identify effective coping strategies used by members of the general population and university students to manage their psychological distress. Then the literature pertaining to strategies and resources used by teachers is explored, particularly the coping literature focussed on techniques for the management of depression, anxiety and stress and, where possible, by student-teachers.

3.2 Justification for a Prevalence Study Approach

The prevalence of psychological distress has been widely studied among university students in medicine and allied health professions, and more recently among university students from other faculties such as veterinary science and law. However,
few studies of psychological distress among student-teachers have been found, and none was found to specify an association between psychological distress, primary school student-teachers and their Internship.

There are studies about the impact of the practicum among early childhood teachers, and psychological distress experienced by secondary-school student-teachers. There is also a substantial body of literature about the impact of stress among teachers. However, this thesis provides a study not found in the literature, namely the prevalence, impact and coping strategies of primary school student-teachers, particularly in relation to their Internship.

This chapter provides an examination of the literature pertaining to the prevalence of psychological distress generally among the broader population, then among university students, the teaching profession, and, where possible, among student-teachers. It also provides an examination of personal self-help and other coping strategies, and professional resources used by university students, teacher and student-teachers.

There is considerable prevalence literature that deals with psychological distress in the general population, and among university students in particular faculties. As this thesis investigates a comparison of the Internship on levels of psychological distress as experienced by a cohort of Australian primary school student-teachers, International and Australian literature is addressed. This chapter provides an examination of recent literature, that is, the historical period from the year 2000, and includes earlier references, where necessary, to demonstrate the basis of the argument. Relevant themes provide an overview and critique of relevant studies, from 2000 onwards, that pervade this, and earlier literature, and the review is situated within an educational and individual mental health framework.
3.3 Part A: Prevalence and Impact of Psychological Distress among student-teachers

3.3.1 Prevalence of psychological distress world-wide

The literature found that addresses the prevalence of psychological distress, including anxiety, stress and depression world-wide, in Australia, and among university students in now addressed.

The Global Burden of Disease study (Murray & Lopez, 1997), based on data from 47 countries, provided a comprehensive assessment of disability from diseases and risk factors. In that study, it was predicted that by the year 2020, depression would be second only to heart disease in terms of its disabling impact on world population. Thus, the scope and impact of depression and anxiety disorders worldwide is expected to be highly significant. It was also estimated that anxiety disorders would follow closely behind major depression when considered in terms of medical illness contributing to disability. In that report, mental and alcohol-use disorders were linked to disability, and they were linked to death by suicide.

The World Health Organisation (WHO) has classified mental and behavioural disorders (Prince et al., 2007). Depressive episode and stress-related disorders, anxiety and substance-use disorders were classified as among the most prevalent, and common, mental disorders, and as already stated above, mental health disorders, particularly mood disorders (depression) appear to contribute to disability (Prince et al., 2007).

World-wide, people continue to be exposed to stress-inducing factors which contribute to their psychological distress, as measured by their levels of anxiety, depression, stress, alcohol disorders and suicidal behaviour (Parker & Fletcher, 2007; WHO, 2005). The prevalence of anxiety and/or depression world-wide, measured by the number of visits made by adults in a 12-month period to their doctor, was found in 10 –
20% of patients (Hirschfeld, 2001). However, despite WHO’s identification of major depression as the fourth leading cause of disease, one study revealed that 50% of cases of depression were not recognised by medical practitioners (Andrews, Henderson, & Hall, 2001). An explanation, from that study, is that patients did not necessarily discuss their mental illness in a visit to their doctor.

Another study, conducted with more than 4.5 thousand people, throughout England, Scotland, Wales and Ireland, revealed similar results (Ohayon, 2007). In that study, in-depth telephone interviews were conducted with a random sample considered to represent that population. The interviews explored the presence of depressive disorders, and 5% of people in this population were found to be depressed. However, further probing revealed that only 12.5% of them had consulted a doctor about a mental health condition. This study further supports the evidence that depression and anxiety disorders may be unrecognized and undiagnosed.

3.3.2 Prevalence of psychological distress in Australia

In Australia, a National Survey of Mental Health and Well-Being was conducted with over 10,000 Australian adults. The findings, related to the prevalence of mental and substance use disorders, revealed that more than 20% of them had suffered from a mental health problem in the previous 12 months. At the time of the survey, 14% had an existing self-diagnosed disorder, but only 35% of them had sought professional assistance (Andrews et al., 2001). In 2002, 61% of Australians reported that they, or someone close to them, had experienced depression (Hickie, 2004). An analysis of the grants provided by the Australian Commonwealth government in mental health research found that mental disorders accounted for more than 19% of the disease burden (Jorm, Christensen & Griffiths, 2002). These authors noted that mood disorders (including
depression) were the most burdensome disease, followed closely by substance use, and anxiety disorders.

The results from a National Survey of Mental Health and Wellbeing (NSMHWB), conducted by the Australian Bureau of Statistics, the USA National Comorbidity Survey and the British Psychiatric Morbidity Survey were compared (Wilhelm et al., 2003). The authors found that the total prevalence of major depression was 3.3% (males 2.4%, females 4.2%).

The prevalence of psychological distress as defined, referring to a mental state characterised by anxiety and mood states (including depression), and also alcohol use in tandem, was also reported in the 2004-05 Australian National Health Survey, conducted by the Australian Bureau of Statistics (ABS, 2006). In that survey, 13% of the Australian adult population had high or very high levels of psychological distress, and of these, 45% included both anxiety and depressed mood. The greatest increases in the prevalence of psychological distress were among people aged 18-24, and females aged 35 years and over, particularly women who were separated.

3.3.3 Prevalence of psychological distress among university students

High levels of psychological distress have been reported among students in various university faculties, constituting a serious health concern for those affected. For example, 12% of university students from the Karolinska Institute of Medical University, Stockholm, Sweden were anxious or depressed (Dahlin, Joneborg, & Runeson, 2005). In that study, an association between stress factors, including financial concerns, worry about the future, academic workload, and depression was found. Gender differences were also noted. Depression was prevalent among 16.1% of the female students. That was higher than for both male students (8.1%), and the general population (9.9%).
Psychological distress was reportedly greater among the university students in various university faculties world-wide, than among the general population (Wong et al., 2006). Wong (2006) found that 30% of Hong Kong university students were depressed, anxious and/or stressed, and that this percentage was similar to studies among US university students. Depression, anxiety and stress was of moderate severity or above in 21%, 41% and 27% respectively of these Hong Kong university students, and that author reported that these students were likely to suffer impairment, and require attention from health-care professionals. These high rates of psychological distress were expected to impact on the students’ educational attainment, and their quality of life.

The prevalence of psychological distress has also been measured among university students from other faculties. For example, as follows;

- In a Law faculty, whilst not recorded as a percentage, anxiety and depression were found to be significantly higher among law students than among either the general population or medical students (Dammeyer & Nunez, 1999; Helmers et al., 1997; Kellner, Wiggins, & Pathak, 1986).

- In a Dentistry faculty, 33% of students experienced occupational stress from their interactions with patients, fears of litigation, and financial matters (Humphris et al., 2002). They also experienced debilitating stress from academic work, interpersonal relations and/or their living environment (Muirhead & Locker, 2007).

- In a Physiotherapy faculty, an estimated 15-18% of students displayed symptoms of depression or poor coping skills (Tucker, Jones, Mandy, & Gupta, 2006)

- In a Medicine faculty, 32% of students were psychologically distressed (Alem, Araya, Melaku, Wendimagegn, & Abdulahi, 2005; Inam et al., 2003; Khan et
First year students had the highest degree of pressure from studies, and women students had higher rates of depression than men (Dahlin et al., 2005)

- In a Veterinary Science faculty also, 32% of students were psychologically distressed (Kogan, McConnell, & Schoenfeld-Tacher, 2005; McArthur, Reisbig, White, & Rush, 2006; Williams et al., 2005)

Similar stressors were present in medical, dental, nursing and allied health professions (Dutta et al., 2005). Together, those studies above indicated that the levels of psychological distress symptoms were greater among the university students in several faculties than among the general population. However, some caution should be noted when drawing comparisons about these levels of psychological distress because “stress, depression and anxiety are not always measured and reported as discrete variables, nor are the individual variables measured in similar ways” (McArthur, 2006, p. 434).

At an American university, responses to a web-based survey sent to a sample of approximately 2,500 undergraduate students found an estimated prevalence of 15.5% of those students had depressive and/or anxiety disorders, and this included 2% who had suicidal thoughts (Eisenberg et al., 2007). Although the rate of responses was less than 50%, and there was a non-response bias, a significant 44.3% of these students reported that emotional or emotional difficulties had affected their performance in the previous four weeks. In that study, there were strong associations between anxiety disorder and major depression (13.8% had major depression). Psychological distress was less evident among students who were older than 25, and among those who lived on campus (not with parents), or with a partner.
Psychological distress was found among international university students in Australia (Khawaja & Dempsey, 2007). Contributory factors included poor social support, financial worries, accommodation issues, and dysfunctional coping strategies. Psychological distress was also found among Australian university students who were patients at a university health service (Stallman, 2008). They were invited to rate their psychological distress as measured on a 5-point Likert scale. The results indicated that 53% of those students had significant (moderate, high and very high) levels of psychological distress, and that it was higher among students who were older than 24 years of age, but gender was of no significance.

Academic pressures, social issues and financial problems may cause stress for university students and student-teachers. Those stressors, together with distress from the academic workload which left students feeling overwhelmed, were found among university medical students (Guthrie, Black, Bagalkote, Campbell, & Creed, 1998; Vitaliano, Maiuro, Russo, & Mitchell, 1989). However, elevated anxiety or depression levels among university students may not necessarily be linked to their academic or work performance (Helmers et al., 1997).

3.3.4 Prevalence of psychological distress among teachers

The demands of school teaching may contribute to stress, elevated anxiety, or depression, and there is considerable research on understanding the effect of stress among teachers (Kyriacou, 2001). Their stress, as found in a study with Tasmanian teachers, may be attributed to administrative issues, lack of supervisory support, the rapid changes in education, increased workloads, lack of support and “changes in the student population” (Easthope & Easthope, 2007). Teachers’ distress is not the focus of this thesis, but that study contributes an understanding of the potential stressors facing contemporary Australian student-teachers who are required to practice their teaching
skills during an Internship. Levels of psychological distress among student-teachers, are explored, and these results further contribute to understanding whether or not student-teacher distress may be linked to the practices of their school Internship teaching experience (Campbell & Uusimaki, 2006).

Most well-being studies in the field of education tend to identify stress and job demands among teachers (Griva & Joekes, 2003; Pillay et al., 2005; Tuettemann & Punch, 1992). Stress levels among practising teachers are high, with the reported percentage of stress found to be 37% (Kyriacou, 2001). However, an investigation conducted among a large sample of teachers in Western Australia, revealed that 45% of these Australian secondary school teachers had even higher levels of psychological distress (Tuettemann & Punch, 1992). The extent to which they reported professional psychological distress was related to whether or not they perceived themselves to be effective, as well as their perceived collegiate support, and the recognition they received. Tuettemann (1992) claimed that this proportion represented “twice that for the general population, and perhaps four times as high as that for the professional population” (Tuettemann, 1992, p44).

3.3.5 Prevalence of psychological distress among student-teachers

There is little literature on the measurement of psychological distress among student-teachers. There are only a few international and Australian studies specifically devoted to student-teachers (Chan, 2002; Chaplain, 2008; Zimmermann et al., 2008). What little there is, tends to focus more on student-teachers' reflections about their experiences during their Teaching Practice, often called the Practicum (Sumson & Thomas, 1995), giving no account of any pre-existing or previous levels of psychological distress.
In a study of Chinese student-teachers in Hong Kong, Chan (2002) used a measure of psychological distress that provided scores related to the student-teachers’ health concerns, sleep problems, anxiety, aspects of depression, and suicidal intention. He reported that 35% of these student-teachers were psychologically distressed. The relationship between professional demands, self-efficacy and coping using social support, were all found to impact on their levels of psychological distress (Chan, 2002). In this study of psychological distress among Chinese, Chan reported that social support was a major factor associated with the influence of stress and distress among this group. He also measured social support, self-efficacy and teacher stress, and self-efficacy was a predictor for sleep problems and anxiety. Overall, the study demonstrated that social support was positively associated to some degree with decreased psychological distress in this population.

In the UK, Chaplain (2008), measuring psychological distress with open-ended questions in addition to a psychometric instrument, reported that, overall, 38% felt that their Practicum experience had been extremely stressful. This was similar to the 37% identified among teachers in the UK (Kyriacou, 2001). In that study, student-teachers identified behaviour management, workload and lack of support as significant professional demands which had an impact on their stress levels (Chaplain, 2008). Zimmermann, Wangler, Unterbrink, Pfeifer, Wirsching and Bauer (2008) presented results of a study conducted with German student-teachers for whom no practicum is offered, and found that their psychological distress was also significant (Zimmermann et al., 2008). These German student-teachers were not offered the experience of an Internship, but 44% reported having a mental health problem. Their reasons included role conflict, time commitments and the need for occupational mobility.
In an Australia study, Sumsion and Thomas (1995) measured stress levels among early childhood student-teachers prior to, and following, their first Practicum. Student-teachers were then offered a six-week relaxation intervention. They reported being less stressed by their second Practicum (Sumsion & Thomas, 1995). More recently, in an Australian cohort of undergraduate and postgraduate early childhood, primary and secondary school student-teachers, levels of anxiety, as measured by the Depression, Anxiety and Stress Scale (DASS) were reduced following the pilot of an intervention administered to them (Campbell & Uusimaki, 2006).

3.4 Impact of Psychological Distress

The impact of psychological distress on individuals can be debilitating mentally, physically and emotionally (Dyrbye et al., 2006). Depression may be first experienced in adolescence, remain untreated in adulthood (Hickie, 2004), and in extreme cases, the results have been fatal (Lindeman et al., 2007). For many individuals, the personal impact of psychological distress has been experienced as physical symptoms (Donaghy, 2004), or it has manifested in symptoms associated with anxiety, including impaired functioning, diminished performance and lowered productivity (Chandavarkar, Azzam, & Mathews, 2007; Wong et al., 2006), suicidal ideation and increased mortality (Cuijpers et al., 2007) and depression (Garlow et al., 2008). Psychological distress is also a risk factor for absence from work, and long-term sickness (Bultmann et al., 2005). The individual’s personality may also impact on their perceived professional competencies (Matsudaira & Kitamura, 2006; Van Yperen & Hagedoorn, 2008).

Even mild depression has a considerable impact on people’s quality of life, and the symptoms of major depression for psychologically distressed individuals are serious (Cuijpers et al., 2007), particularly since suicide has been found to be highly associated with depression (Dibben, Sims, Watson, Barnes, Smith et al., 2004). Thus the impact of
psychological distress may be negatively associated with costs to the Australian community in general, and has potentially serious implications (Jorm, Christensen, Griffiths, & Rodgers, 2002).

3.4.1 Physical symptoms associated with psychological distress in the general population

The physical symptoms and conditions associated with anxiety are predominantly heartburn, chest pain and gastrointestinal disorders, but sufferers may also experience conditions ranging from rashes to cardiovascular disease (Norton et al., 1999). Depression has various biological effects too, such as the relationship between depression, stressors and immunological functioning (Prince et al., 2007). Symptoms of psychological distress, when experienced as depression, may include loss of enjoyment of life and excessive worry, sleeping poorly or waking early, and, related to age may be the feeling of being slowed down, (Christensen, Jorm, Mackinnon, Korten, Jacomb et al., 1999). High levels of stress have also been associated with headache problems (Degges-White, Myers, Adelman, & Pastoor, 2003).

People presenting to their medical practitioner with complaints for behavioural problems are more likely to talk about physical, rather than psychological, symptoms (Warmerdam, van Straten, & Cuijpers, 2007). These authors found that the most frequent presenting symptoms were back pain, chest pain, shortness of breath, heart palpitations, problems with sleep or appetite, and fatigue. Patients were less likely to express their feelings of hopelessness, lack of mastery, worry about the future and other psychological components of depression which may impact on the quality of an individual’s life. However, patients who had co-morbid depression and anxiety had higher severity of illness, and significantly greater impairment in work functioning, psychosocial functioning, and quality of life. Co-morbid depression and anxiety were
also associated with a significant increase in suicide attempt risk above what was
defined by the DSMIV-TR (2000) refers to
repeated failure to fulfil work, school or home obligations. Substance abuse is found
among the general population and the professions, with similar rates shared between
health care professionals and others (Baldisseri, 2007). That author found that signs and
symptoms of alcohol abuse in the work environment contributed to frequent absence
without explanation, lateness, interpersonal conflicts and decreased performance.

Work-related stress was a risk factor for alcohol abuse among Indian medical
students (Kumar & Basu, 2000). In the UK, lifestyle issues, including alcohol
consumption, sleep quality, exercise and anxiety, depression and stress were measured
in medical students (Newbury-Birch, Walshaw, & Kamali, 2001). Alcohol was
measured in units. One pint of full strength beer represented three units, and one glass
of wine or measure of spirits represented one unit. These students’ alcohol
consumption was associated with both anxiety and stress. There was no significant
association between alcohol abuse and their depression.

In Australia, it is considered safe for women to consume one standard drink
daily, and men 1-2 standard drinks (Wyn, 2009). However, as the 2004-05 National

3.4.2 Alcohol abuse associated with psychological distress

Research conducted by the Columbia University’s Mailman School of Public
Health in the US reported that the risk of developing a major depressive disorder
(MDD) begins from the age of 12 (Berger, 2005). Researchers found that 30 is the mean
age of developing MDD, and it is twice as likely in females. There is a strong link
between MDD and anxiety disorders, an association with personality type, and 14% of
those with MDD also had an alcohol disorder.

Impairment, through substance use, defined by the DSMIV-TR (2000) refers to
Health Survey revealed that a significant proportion of young people drank at risky levels at least once or more each month, and this behaviour has been linked to injuries, accidents, assaults, drowning, suicide and physical health impairment, including liver damage, cancer and high blood pressure (Wyn, 2009).

University students, and student-teachers may be at risk, as excessive alcohol use among psychologically distressed university students is not uncommon (Chidley Werch, Hui Bian, Michele Moore, Steve Ames, Carlo DiClemente et al., 2007). For example, a study among US university psychology students found there was a significant relationship between their daily use of alcohol, coping and depressed mood (Flynn, 2000). There were no gender differences among these students who used alcohol daily as a coping mechanism, but there was a difference between alcohol use depending on whether or not the student was experiencing symptoms of depression when the measures were taken. There was not a significant correlation between mood and daily use of alcohol among those who were already depressed. Another study, with graduate medical students in India, linked alcohol abuse with anxiety and depression (Kumar & Basu, 2000). In that study, alcohol abuse was also associated with personality disorders.

3.4.3 Suicidal thinking associated with psychological distress in the general population

People who are depressed may also have thoughts of suicide. Co-morbid anxiety and depression, and being male, are risk factors in suicide (Gonda, Fountoulakis, Kaprinis, & Rihmer, 2007). Those authors found that most suicide victims sought help before committing suicide, but had not received either an appropriate diagnosis or appropriate treatment.
Concern for the mental health of university students, including their depression, anxiety and suicidal thinking, led to a study with a large sample of undergraduate and graduate students in America (Eisenberg et al., 2007). Measures indicated that 15.6% of those undergraduates were psychologically distressed. Females were twice as likely to be anxious, and 2.5% of the students reported suicidal thinking during the preceding four weeks. However, in that study, living on campus rather than at home with parents, being married and being older (over 25 years) were all associated with having fewer mental health problems.

Suicidal feelings and actions have been shown to be quite common among university students, as demonstrated by a College Screening Project, developed by the Foundation for Suicide Prevention to identify at-risk American university students across all faculties, and to encourage them to seek help (Garlow et al., 2008). Mild and moderate levels of depression were found among approximately 60% of the undergraduate student respondents, but there was no association between alcohol use and the students’ suicidal thinking. However, suicidal thinking was associated with anxiety and other emotional distress, such as feeling out of control and desperate. There was no difference in depression scores among those who endorsed alcohol use, but suicidal feelings, thoughts, planning and attempts were relatively common in this particular sample; 71% of whom were female. More males (14.6%) than females (9.83%) reported existing suicidal thoughts and/or plans at the time of that study. At the time of measurement, 10.9% of those with the most severe symptoms of depression were receiving treatment, but the vast majority (approximately 84%) who were moderately or severely depressed and/or who had suicidal thoughts were not receiving treatment.
The risk of suicidal thoughts increases among young adults aged between 18 and 24 years of age (Friedman & Leon, 2007). As suicidal thoughts are symptomatic of depression, antidepressant medications in the US carry warnings about the potential association between suicidal thoughts, feelings and behaviour in young people (Howland, 2007). Data about the completed suicide of medical students during a period spanning the previous 5 years, showed that, of the 15 students who committed suicide during that time, only one was female (Hays, Cheever, & Patel, 1996).

Characteristics that detect potential suicidal ideation and increased suicide risk include anxiety minor depression, gender, previous attempts, other mental disorders, adverse life-situations, and acute stress (Gonda et al., 2007). In that study it was reported that potentially 15% of suicide victims with major depression may eventually commit suicide. However, the authors also suggested that people at risk could experience a buffer effect if they had strong social support networks and/or an early diagnosis.

In an effort to reduce the frequency of attempted suicide, the German Ministry of Education and Research conducted a campaign to introduce depressed people to the concept of self-help (Althaus, Niklewski, Schmidtke, & Hegerl, 2006). Following this campaign, there was a 21.7% decrease in suicide and suicide attempts. Many other regions in Germany and Europe subsequently initiated this self-help model. Because stress is predictive of anxiety and depression in university students (Morrison & O'Connor, 2005), the strong relationship between severity of depressive symptoms and suicidal ideation in this group (Garlow et al., 2008) would appear to warrant further investigation among student-teachers, who are also university students.
3.4.4 Psychological distress and attrition from the teaching profession

Psychologically distressed people have reported bodily symptoms of distress resulting in their inability to work (Donaghy, 2004). As outlined earlier, teachers’ work is known to contribute to individual teacher’s levels of stress (Kyriacou, 2001) and burnout (Griva & Joekes, 2003). Psychological distress may threaten their self-esteem and/or well-being. Thus, the work performance of teachers who are psychologically distressed may be diminished (Maslach et al., 2001). Whether or not performance is impacted, psychologically distressed teachers may leave the profession (Pillay et al., 2005), or take long-term sick leave (Bultmann et al., 2005).

In Australia, a study of Secondary school teachers in Queensland reported an association between professional burnout, whether or not they experienced feelings of mastery, teaching workload, the requirement to learn new information and skills, technological innovations, and dealings with students, parents and the community (Pillay et al., 2005). The psychologically distressed teachers in that study saw themselves as less competent, and they viewed their role as more demanding than that of others.

The demands of the teaching profession affect most teachers. They may doubt their career choice because they feel disenchanted with their profession (Kyriacou, 2001). Student-teachers may also experience psychological distress associated with professional demands, with potentially serious consequences. However, rates of suicidal thinking among teachers and student-teachers are unknown. What is known, from a UK study about bullying of student-teachers, was that female student-teachers aged less than 28 years reported feeling a loss of confidence to the point where they had considered leaving the profession (Maguire, 2001). Those female student-teachers had
been bullied either by the teacher/s in the school where they were undertaking their practical experience, or by tutor/s at their university.

Like teachers, student-teachers may also be vulnerable to negative emotional experiences triggered by perceptions of self-doubt and the demands the profession. The teaching of certain subjects may also contribute further to emotional distress. Primary school student-teachers are required to teach across the curriculum, but may not feel adequately prepared for scrutiny, as demonstrated in a study of teachers who were interviewed about teaching mathematics (Bibby, 2002). Their comments indicated fear of criticism and judgement, and their emotional vulnerability. To cope with their feelings of shame, they switched off, and disguised their feelings.

Given such stressors for existing teachers, it is hardly surprising that in a study of UK student-teachers, Chaplain (2008) found that 38% of them regarded their teaching experience as very or extremely stressful. In that study, the student-teachers attributed their distress to the school students’ behaviour. During their training, the intense demands of teaching were highlighted, and this dampened their optimism. Many of these student-teachers anticipated that their levels of psychological distress would further increase when they began teaching full-time (Chaplain, 2008). In fact, in that study, Chaplain (2008) found that many of the student-teachers did not ever begin teaching, and others left very early in their careers. Reasons given included stress and/or mental health issues.

An Australian government study, “An Ethic of Care: Effective Programs for Beginning Teachers (2002)”, identified that at least 20% of beginning teachers felt inadequately prepared for their role. The stress of the Practicum itself may exacerbate pre-existing anxiety and depression (Campbell & Uusimaki, 2006). In addition, beginning teachers may have unrealistic or inaccurate expectations
concerning the work involved in teaching, and whilst some may possess adequate
self-management skills, others may be less likely to adapt to and cope with the
teaching role (Stevens et al., 2007).

However, not all student-teachers are privy to practical experience. Student-
teachers in Germany do not engage in a practicum or Internship, but they also had
mental health problems. At the beginning of their teaching career a significant
proportion (44%) of them were found to be distressed (Zimmermann, Wangler,
Unterbrink, Pfeifer, Wirsching et al., 2008).

3.5 Personal Demands Associated With Psychological Distress

As shown above, the impact of psychological distress may depend upon work-
related or individual factors. Work can create additional demands on families, which
may subsequently impact on a person’s psychological well-being (Rantanen, Kinnunen,
Feldt, & Pulkkinen, 2008). Conversely, conflicts with family members may also predict
emotional overload at work. In their study to determine if work-family conflict
originated from work-family or family-work conflict, those authors followed up
participants after six years, at which time they found that the everyday strains, including
marital adjustment and parental stress, were short-lived, with family structures changing
as children aged, and/or new children were born into the families. However, they found
that job exhaustion had long-term consequences for well-being, as it preceded
psychological distress. They found no gender differences, but argued that personality
characteristics may explain the experience of work-family conflict and psychological
well-being, and that mood may transmit psychological strain across both work and
family domains.

A significant proportion (42%) of Aberdeen university students in the UK
reported that financial stress accounted for more than 50% of their entire stress
(Ross, Cleland, & Macleod, 2006). Of those, 34% also thought that worrying about money affected their studies. These authors found that university students stressed by financial debt are likely to under-perform. Student-teachers also may be already stressed by personal demands and responsibilities which have little to do with Internship demands. They may also be concerned about their financial debts. They may worry that they are unable to be employed while undertaking their Internship, in addition to feeling challenged by their performance at their Internship, the academic workload, being evaluated, finding a balance between personal and professional commitments, time management and enforcing discipline among school students (Murray-Harvey et al., 2000).

“Student-teachers also may be already stressed by personal demands prior to teaching in schools. Individual student-teachers may suffer from self-doubt, associated with aspects of their personality, and particular life circumstances which are personally demanding, prior to being concerned about their competency to teach, and mastering teaching in practice during an Internship. Thus, individual student-teachers may experience the demands of teaching differently, depending on personal responsibilities”.

Whilst Australian student-teachers may engage in the real world experience of teaching, a profession, known to be stressful and their stress may be exacerbated by their Internship experience, as members of the general population, it is reasonable to predict that some of them may have pre-existing high levels of psychological distress (Jorm, et al., 2000). Individual student-teachers may suffer from anxiety associated with aspects of their personality, and/or particular life circumstances which are personally demanding, in addition to being concerned about their competency to teach, and mastering teaching in practice during an Internship. German student-teachers do not
undertake an Internship, yet they too were psychologically distressed (Zimermann, Wangler, Unterbrink, Pfeifer, Wirsching et al., 2008). Thus, individual student-teachers may experience the demands of teaching differently, depending on personal responsibilities and other factors.

Among university students, in addition to individual personality styles, personal demands including financial factors, social support networks, expectations of self, perceived family expectations and demands, and availability of coping resources have been associated with psychological distress. Work-family conflict further impacted on psychological distress (Rantanen et al., 2008).

3.6 Personality and Mastery Associated With Psychological Distress

Wilhelm et al., (2004) found that personality style and social support systems, factors external to the workplace, may impact on psychological distress and coping.

3.6.1 Personality theory

Personality theory can be related to the early work of Sigmund Freud, and “the therapeutic goal of bringing unconscious thoughts into the present consciousness” (Lefton, 1994, p.428). Another early theorist, Adler, emphasized personality characteristics associated with innate social needs, motivations, feelings of inferiority and “striving to achieve perfection” (Lefton, 1994, p.438). Cloniger, Svrakic and Przybeck (1993) emphasized four dimensions, including novelty seeking, harm avoidance, reward dependence and persistence, and this model has been used to understand patients with a major depressive disorder (Celikel, Kose, Cumurcu, Erkorkmaz, Sayar et al., 2009).

Others, including Eysenck, who emphasized different character traits, considered that personality could be thought of in terms of three dimensions (Lefton, 1994). These characteristics were labelled “emotional stability, introversion or extroversion and
psychoticism” (p. 443). These trait categories fit with today’s widely accepted five-factor structure in personality theory (Goldberg, 1990; McCrae & Costa, 1987), and can be summarized as openness, conscientiousness, extroversion, agreeableness and neuroticism (also referred to as "emotional stability"). The three factors of interest in this study are as follows:

- Emotional stability, also labelled as neuroticism, refers to the extent to which people are worried or calm, nervous or at ease, insecure or insecure
- Extroversion/introversion, refers to the extent to which people are social or unsocial, talkative or quiet, affectionate or reserved
- Conscientiousness/undirectedness, refers to the extent to which people are reliable or dependable, careful or careless, punctual or late, well organized or disorganized

Personality development has been ascribed to an interaction between genetic traits, learned behaviour, and self-concept, and it may be associated with depression, anxiety, or stress (Cloninger, Svrakic, & Przybeck, 1993). Personality characteristics can be also be associated with severe behaviours, such as an attempted suicide (Parker, 2006).

### 3.6.2 Mastery

Personal mastery may also be associated with the impact of psychological distress. Mastery has been defined in a study by (Krokavcova, Nagyova, Van Dijk, Rosenberger, Gavelova et al., 2008) as:

“the extent to which patients see themselves as being in control of forces that affect their lives” (p. 1237).

In that study of the relationships between mastery, functional disability and perceived health status, the findings indicated support for the hypothesised relationships when the ages of the participants were grouped between younger and older patients. In a
study of people whose arthritis increased under stressful conditions, it was found that feelings of personal mastery had a beneficial impact on their levels of pain and stress, and acted to buffer them from the negative effects of their pain (Younger, Finan, Zautra, Davis, & Reich, 2008). This belief of control over one’s health and personal mastery was associated with lower levels of stress, although the authors cautioned that personal mastery may be “an overly broad trait” (p. 529), and that their study lacked a healthy control group.

Mastery may also be associated with the extent to which university students are psychologically distressed. Verger, Combes, Kovess-Masfety, Choquet, Guagliardo et al., (2009) concluded that mastery had a protective role for French university students who were psychologically distressed. Their results suggest “that mastery is directly associated, both in men and women, with positive mental health” (p. 648), and that mastery buffers a lack of adjustment to the academic environment in female university students.

3.6.3 University students’ personality and psychological distress

Guthrie, Black, Bagalkote, Shaw, Campbell, and Creed (1998) found that emotionally vulnerable students found it more difficult than their peers to manage the demands of their studies, and their psychological stress may continue during their subsequent careers. The link between psychological distress and personality, as mentioned in Cloninger et al.’s (1993) findings above, were explored in a Japanese study to clarify the personality risk factors for fatigue (Jiang et al., 2003). Their findings identified a relationship between medical students’ personality traits, anxiety, and physical fatigue. The relationship between personality and depression and anxiety was also explored with Japanese psychology students (Matsudaira & Kitamura, 2006). These researchers modified Cloninger’s (1993) Temperament and Character Inventory
and the Hospital Anxiety and Depression Scale (HADS) for Japanese students. They reported that their findings were comparable to results from a similar American population. Anxiety and depression were significantly predicted by temperament and character (personality), and those students with higher adaptive traits, including sentimentalism, warmth, attachment and dependence, were reportedly more vulnerable to the development of depression.

A study with French university students found an association between perfectionism and depression, anxiety and other disorders (Masson, Cadot, & Ansseau, 2003). These authors also noted that females were more anxious and less self-confident than males. Another study of the relationship between perfectionism and the symptoms of distress was conducted with university students from both Medical and Arts faculties (Enns et al., 2001). Overall, there were few differences between the two groups. The medical students had higher scores on conscientiousness, but in both groups of students, there was an association between perfectionism, neuroticism and conscientiousness, and the symptoms of distress (depression, hopelessness and suicidal ideation).

In the US, a longitudinal study conducted with university students from across all faculties during orientation week, and again at the end of second semester, found that adjustment to university was predicted by personality (Pritchard, Wilson, & Yamnitz, 2007). In that study, university students with higher levels of perfectionism had poorer physical health, drank alcohol more frequently, had lower self-esteem and their coping mechanism was to deny their situation, or criticise themselves. They were also less optimistic. Those with higher self-esteem reported better physical and psychological outcomes. Extroverts were happier and healthier, and experienced less depression than did introverts.
In the UK, Firth-Cozens (2001) reported that measures of personality predicted adverse mental health among students, and reported that self-criticism strongly predicted stress and depression. A predictive study with undergraduate Scottish students indicated that anxiety was triggered by the way the students responded to stressful situations, but rumination, a behaviour common to depressed people, did not predict anxiety (Morrison & O'Connor, 2005). The authors suggested that trying to avoid thinking about stress actually increased it, as constantly telling oneself not to think about stress actually leads to more focus on it, and this increased rumination increased anxiety. They suggested that the positive relationship between rumination and stress predicted social dysfunction, and was indicative of the perfectionism.

In the UK, a longitudinal study over 12 years, was conducted to measure the relationship between personality and stress (McManus et al., 2004). In the Medical students who later became doctors, high neuroticism and low conscientiousness were associated with perceived high workload, higher levels of stress, reported emotional exhaustion and introversion. Greater satisfaction was associated with extroversion. The authors concluded that stress and burnout in this population was predicted mainly from personality.

Researchers in the Netherlands, however, hypothesised that it is not so much personality, but perceptions held by others, that are actually more demanding, which contributes to the stress experienced by university students, as they feel unable to meet these standards (Van Yperen & Hagedoorn, 2008). Psychology students’ psychological distress, personal standards and feelings of self-efficacy were measured. As predicted, psychological distress was correlated with trying to achieve the high standards set by others. Elevated levels of distress were related to self-criticism, based also on the students’ perceptions that they consistently failed to meet the high standards they set for
themselves. This thinking, in turn, undermined their sense of competence and effectiveness.

Predictors associated with mental health and personality characteristics were explored in a nation-wide study of Norwegian medical students, prior to graduation (Tyssen, Vaglum, Gronvold, & Ekeberg, 2001). Personality was presumed to be consistent over time. Neuroticism, extroversion/introversion and psychotic distortions as well as prevalence and ways of coping were measured. The results indicated that personality, as well as previous mental health problems were significant predictors of mental health issues, but extroversion was the only personality trait that had an independent impact on the results.

Further exploration of the links between personality and psychological distress occurred in two Australian studies conducted with members of the Canberra community (Jorm et al., 2000). Those authors sought to replicate earlier studies, by demonstrating in a cross-sectional survey and a longitudinal study, an association between high neuroticism and low extroversion, and between personality traits (neuroticism, extroversion and psychoticism), and anxiety and depression. However, neither study replicated earlier studies. Reasons given included the lack of statistical power, and procedural differences, such as the fact that this study was conducted with older community members, and not university students.

3.6.4 Australian university students’ personality and psychological distress

Australian medical student selection includes procedures to determine if the applicants have the personal characteristics required to manage the demands of the training (Knights & Kennedy, 2006). These authors suggested that the demands of work, including sleep deprivation, constitute vulnerability for depression among students. Being extremely indecisive and conformist may also lead to vulnerability to substance
abuse, anxiety, depression, anger and suicide for these students. The educational stress and the interaction between the demands of the work and personality (Riley, 2004) may activate dysfunctional tendencies, but in Australia there is a selection bias towards conscientiousness (Wilhelm, 2002).

3.6.5 Teachers’ personality and mastery associated with psychological distress

Potential associations between sources of stress, burnout and personality were measured in a cross-sectional study conducted with Greek primary school teachers (Kokkinos, 2007). Personality characteristics from the five-factor structure (McCrae & Costa, 1987), including openness, conscientiousness, extroversion, agreeableness and neuroticism were all measured. The findings indicate that emotional exhaustion was predicted by the personality characteristics neuroticism, extroversion and conscientiousness. However, the only characteristic significantly associated with emotional exhaustion was among those with neurotic personalities.

Not all teachers are stressed by their working environment, due to individual factors which moderate their perceptions of the stressors. Those teachers categorised with Type A behaviour, which predisposed them to physical symptoms including gastrointestinal, respiratory and sleep disorders, and chest pains, headaches and migraines, were also those who worked harder to achieve their teaching goals (Jepson & Forrest, 2006). This Type A conscientious behaviour was a strong predictor of stress in this study conducted with both primary and secondary school teachers in the UK, but primary teachers stress levels were significantly higher, indicating that those teachers were most at risk of developing psychological distress.

Parker and Martin (2008) found that teachers who used what the authors described as a cognitive mastery orientation were more engaged in their work. They measured responses to the statement “I feel very pleased with myself when what I learn
in my work gives me a better idea of how to do something” (p. 9). In discussing their results, they suggested that mastery was predictive of engagement and teacher well-being. This led to their recommendation that interventions for teachers should have an individual, not just an organisational, focus.

### 3.6.6 Personality and psychological distress in student-teachers

Individual student-teacher’s personality characteristics were associated with psychological distress in Australia (Wilhelm et al., 2000). In their longitudinal study, the authors measured student-teachers who became teachers, over 5-yearly intervals. Overall, they found that the personality characteristic neuroticism was more highly associated with lower job satisfaction than the demands of the work itself.

### 3.7 Professional Demands

Psychological distress may be associated with physical health. In a Canadian study, the psychological distress of the general adult population was affected by changes in perceptions of control over their work (Smith, Frank, Bondy, & Mustard, 2008). In that population, psychological distress and physical health was linked to how much control, or lack of control, people felt they had in regard to changes in their work places.

Work conditions may have an adverse impact on teachers’ well-being, but when the Australian teachers had a sense of mastery, the negative impact of the work demands were reduced and job control was positively associated with changes in mastery (Bradley, 2010). Job demands may be exhausting, but the satisfaction of enhanced mastery may be motivating. Being engaged and committed to their organisation may be linked to teachers’ motivation, and, subsequently, to their well-being.
Gender may be associated with psychological distress in the teaching environment, as found in by a study with newly appointed women teachers in the US (Schonfeld, 2000). In that study, the results from measures taken pre- and post-school employment revealed that work-place stress was highly correlated with depressive symptoms, job satisfaction and motivation to teach among female student-teachers.

### 3.7.1 Professional demands, psychological distress and teachers

Changes in working conditions and other associated professional demands in the teaching environment have also been linked to the psychological distress of teachers (Guglielmi & Tatrow, 1998; Schonfeld, 1992). In that review of occupational stress and the health of teachers, the findings supported the hypothesis that work has an impact on teachers’ health, although the empirical studies located used many differing measures, and the authors lamented that the study of teacher stress failed to have sound theoretical frameworks.

In Hong Kong also, significant psychological distress was found among Chinese student-teachers who had been placed in secondary schools for four weeks of teaching practice (Chan, 2002). Finland has one of the world’s leading school systems (McKinsey & Company, 2010). Student-teachers are chosen from among the highest of achievers, and this strategy is presented as an exemplary model. Nevertheless, the demands of teaching have also been linked to burnout and the ill health of Finnish teachers, and no evidence has been found to indicate plans to ameliorate their distress as part of pre-service training (Hakanen, Bakker, & Schaufeldi, 2006).

### 3.7.2 Professional demands, psychological distress and student-teachers

Professional demands, including academic and Practicum-related stressors may also impact on the psychological distress of Australian student-teachers (Murray-Harvey, Silins, & Saebel, 1999). In Australia, there has been debate about the meaning
of professional experience, and whether or not student-teacher training should occur in the workplace rather than university (Sinclair, Trimingham-Jack, & Pollnitz, 2006). In their in-depth study with teacher educators in three Australian universities, those authors found that immersion in the practice of teaching was seen as an integral aspect of teacher preparation. However, the study did not consider the impact, or otherwise, of immersion on the mental health and wellbeing of student-teachers.

Teachers reporting to an Australian inquiry into teacher education stressed that providing high quality teachers is critical, particularly when the role is increasingly complex and demanding (Hartsuyker, 2007). In the report of that inquiry, Hartsuyker (2007) presented the argument that, because teaching is a highly complex profession requiring responses to increasing knowledge requirements, technology, and societal changes, and because there is a high rate of attrition among beginning teachers, high quality school placements for professional experience should be a critical component of teacher education. Factors brought to light in terms of their potential to add to levels of distress among student-teachers at university included workload, understanding the demands of the profession, educational theories and expectations within the field of education, examinations and career development issues.

That teacher inquiry found that support by the supervising teachers was considered to be a very important element of the practicum. However, Faculties of Education have little control over who supervises the student-teachers during their school practicum. The report mentioned above suggested that universities should provide on-going support to supervising teachers, and have clear, specific preparation processes for those supervising teachers.

Demands associated with teaching, identified in pre-service teacher education, may contribute to beginning teacher burnout (Goddard & Goddard, 2006). These may
include time management, lack of resources, adjusting to increasing and perennially changing policies, understanding new curricula, lack of administrative and collegiate support, the crowded curriculum, and student behaviour management. Further, in a study of secondary school student-teachers, these factors were also found to contribute to physical, psychological and emotional symptoms of stress (Herbster, 1988). Since that study, there have been additional technological developments, which may add to the burdens in teaching. Some of these contemporary challenges arising from the use of technologies include the availability of computers, teachers’ and student-teachers’ embarrassment about their lack of competence with the latest programs and systems, possibly associated with lack of professional development and the pace of change, and some may also fear that their actions, or their student’s behaviours could damage the hardware (Russell & Bradley, 1997). When these concerns and fears are associated with psychological distress, such challenges have a serious dimension.

The potential implications of psychological distress, as outlined earlier, include health costs to the Australian community in general (Jorm et al., 2002). There are also health costs to the teaching community, which may be measured in terms of attrition, with one in four early-career teachers leaving the profession within the first five years (Ewing & Manuel, 2005; Wilhelm et al., 2000). This may also extend to student-teachers, for whom the personal demands and responsibilities in their lives may result in them leaving during their pre-service teacher education, or early in their teaching careers.

As discussed earlier, personality characteristics and mastery may contribute to, or ameliorate the impact of psychological distress among individuals, including student-teachers. University academics in some faculties, who have become increasingly aware of the impact of stress, have directed their attention to the psychological well-being and
pastoral care of students (Wong, Patil, Beh, Cheung, Wong et al., 2005). Given the professional demands associated with their Internship, such support, or well-being programs to offer support, in the future may also contribute to enhanced psychological well-being among student-teachers.

3.8 Part B: Management of Psychological Distress

The focus of the second part of this literature review is on evidence-based coping strategies and resources used in the management of psychological distress by members of the general community, university students, teachers, and where available, student-teachers. To meet evidence-based criteria, the strategies and programs reviewed included interventions that had been tested in rigorous trials, had defined samples appropriate to the populations being studied, used psychometrically validated measures and data collection procedures, and showed consistent positive effects (Flay, Biglan, Boruch, Castro, Gottfredson et al., 2005). If, as stated by Dyson (2005), the purpose of teacher education is to prepare and develop teachers, and this process is life-long throughout their teaching career, understanding coping strategies and evidence-based resources has the potential to contribute to the process.

Most assessment of psychological distress and coping, using psychometrically validated items, was found to be based on self-report inventories. However, self-reporting can present an interpretive challenge, as the questions may not capture all the nuances illustrative of a respondent’s points of view. Studies incorporating additional responses obtained using students comments, narratives and researchers’ observations, and with the potential to enrich the coping data by yielding coping strategies not included on the questionnaires, are discussed where available (Borkan, Weingarten, Schlank, Fadlon, Kornitzer et al., 2000).
A second challenge associated with self-report inventories is consistency, due to differences in meanings of words or nomenclature (Folkman & Moskowitz, 2004). For example, coping resources have commonly been classified based on cognitions and/or behaviours (Beck, 1964; Beck, 2005). Many of the studies found were based on a Cognitive Behaviour Therapy (CBT) approach, as CBT had been empirically validated for the management and treatment of anxiety, worry and depression (Hunot et al., 2007; Zaretsky, Segal, & Fefergrad, 2007). Evidence of mindfulness to reduce anxiety and depressed mood had also been found (Davidson, Kabat-Zinn, Schumacher, Rosenkrantz Urbanowski et al., 2003).

Spek, Cuijpers, Nyklicek, Riper, Keyzer and Pop (2007) found that CBT-based materials obtained from books, and web-based programs, referred to as self-help, were also found to be effective when used in conjunction with some form of additional professional support (Spek, Cuijpers, Nyklicek, Riper, Keyzer et al., 2007). Individual resources for stress management included self-referral to university student health centre or private General Practitioners or Psychologists for support with strategies to reduce psychological distress. In addition, where stress management programs have been provided to university students (Werch, Bian, Moore, Ames, DiClemente, & Weller, 2007), the evidence from those approaches in reducing psychological distress is discussed below.

Evidence is provided in this section of the chapter to substantiate the efficacy of the variety of coping strategies used by individuals to manage their psychological distress, the resources available, including self-help, health practitioner support, and programs offered in some university faculties. However, due to their perceptions of stigma surrounding mental health, distressed university students, and student-teachers may resist seeking help for their psychological distress, (Chew-Graham et al., 2003).
When distressed, they may be unable to access their usual coping resources, or there may be other circumstances which preclude them from seeking the professional or other support needed to manage their distress (Mead, MacDonald, Bower, Lovell, Richards et al., 2005). Therefore, the final part of this section of the Literature Review chapter of the coping strategies and resources used by people in general, by university students, and where available, specifically by student-teachers, will address barriers to seeking help.

3.8.1 Personal coping strategies and resources

The extent to which psychological distress affects members of the public, university students in general, and student-teachers in particular, may be associated with their personality, demands in their personal and/or professional lives, as previously explored, and the coping strategies and resources they use (Griva & Joekes, 2003). Individuals may use various positive or negative coping strategies to reduce their psychological distress. Personality and coping styles may filter or exacerbate the effects of work stress, and university students may be taught preventative strategies, including cognitive restructuring, and encouraged to use strategies other than denial or substances, to manage the stress of their roles (Firth-Cozens, 2001).

University students use a variety of strategies, and access differing resources, to manage the impact of their distress (Flowers, 2005; Givens & Tjia, 2002). Active coping strategies commonly used by university medical students, include more positively viewing the situation, reframing their thoughts or cognitions, accepting the situation rather than fighting it, and distracting oneself, thereby preventing time spent ruminating or dwelling on a negative experience (Sreeramareddy, Shankar, Binu, Mukhopadhyay, Ray et al., 2007). Emotional support was also used as a coping strategy by these students.
A positive strategy, cognitive behaviour therapy (CBT) defined as “changing cognitive content so that it is more functional and less distorted” (Bond, 2007, p. 4) was shown to be effective in reducing psychological distress (Kaltenthaler, Brazier, De Nigris, Tumur, Ferriter, Beverley, Parry, Rooney & Sutcliffe, 2006). However, in a systematic review of the evidence about CBT’s effectiveness for psychological distress, Parker and Fletcher (2007) cautioned that there may be a risk of distorting the value of the efficacy of CBT, as other treatments may also be appropriate.

Cognitive strategies have been used effectively in conjunction with mindfulness, defined as “seeing how things are … and bringing our whole heart and mind, our full attention, to each moment” (Goldstein & Kornfield, 1987, p. 62). Mindfulness used alone was also found to be an effective coping strategy (Segal, Williams, & Teasdale, 2002). Mindfulness-based stress reduction strategies, which involve “Sitting Meditation, Body Scan and Hatha Yoga” (Shapiro, Schwartz & Bonner, 1998, p. 586) have been undertaken as self-help, delivered by health professionals, or incorporated into university curriculum (Redwood & Pollak, 2007). Exercise, another positive coping strategy, was also found to be effective for reducing psychological distress in the general population (Lawlor & Hopker, 2001), and social support was found to be an effective positive coping strategy used by student-teachers (Chan, 2002).

In early coping literature to identify and assess coping resources and their effectiveness, Lazarus (1993) suggested that measurements should be taken with regard to the stress associated with specific situations, rather than assessing people’s general or global coping strategies. More recently, coping strategies have been differentiated according to whether or not a person adopts an external, problem-focussed approach, or if s/he uses a more emotional, internalised approach to cope with distressing situations (Folkman & Moskowitz, 2004).
The coping literature reviewed below highlights the complexity of coping processes, and an association between distress and the strategies adopted by individuals. Positive strategies explored included CBT-based and mindfulness strategies, exercise and social support, as well as resources provided as self-help materials. Stress management programs provided to the general public, some of which may be accessed on-line by university students, are also reviewed. Negative coping strategies including the use of alcohol as a coping strategy, and other negative coping strategies including withdrawal and avoidance are also presented (Newbury-Birch et al., 2002).

3.8.1.1 Cognitive Behavioural Therapy (CBT)

Cognitive Behaviour Therapy, or CBT, is a non-pharmacological treatment, which has been used alone, or in conjunction with other therapies, over the past 50 years for the management of psychological distress (Hazlett-Stevens & Craske, 2002). The techniques, developed more than 40 years ago (Beck, 2005), have been empirically validated, and, consistent with scientific method, people using them learn to recognise their physical responses to thoughts, and change their cognitions, irrational thinking and maladaptive behaviours (Hazlett-Stevens & Craske, 2002; Vincelli, Choi, Molinari, Wiederhold, & Riva, 2000). For example, if a person is thinking “my heart is pounding, therefore I must be having a heart attack”, they are taught to consider alternatives, such as “when my heart pounds it is a signal that I am feeling anxious”. Having brought their attention to the consideration of an alternative explanation, the next strategy for management, when they feel their heart pounding, is to practise relaxation strategies, to alleviate the feelings of stress, anxiety and/or depression (Kraus, Kunik, & Stanley, 2007).

CBT has been the focus of many studies, and empirically validated for the management and treatment of anxiety, worry and depression (Hunot et al., 2007;
There is also evidence of a longer-term positive outcome for patients using CBT delivered by health professionals, rather than antidepressant medication (Hensley, Nadiga, & Uhlenhuth, 2004). However, evidence has not been found to support the effectiveness of CBT for psychologically distressed people if it is provided by non-psychologists, or delivered to people from a Non-English Speaking Background (NESB) (Haby et al., 2006).

Nepalese medical students who were severely distressed in response to various factors including hostel accommodation, high parental expectations and lack of time, coped effectively using CBT techniques (Sreeramareddy et al., 2007). In that study, Medical students generally helped themselves by using strategies based on CBT techniques, including positively reframing their thinking, planning their actions, accepting their situation, being active, self-distracted and seeking emotional support. “Active coping” referred to taking action or exerting efforts to remove or circumvent the stressor; “acceptance” meant accepting the reality of their feelings or stressful event; “planning” guided them in adopting a strategy to confront and deal with their stressor; and “positive reframing” referred to making the best of the situation, by growing from it, or seeing it in a more positive light.

A problem-solving approach to anxiety, depression and life difficulties, associated with CBT strategies, may also provide other unexpected benefits for people taught to use that approach. A study of problem-solving skills taught by community health nurses found that, in addition to the problem-solving strategies, having the opportunity to talk was also a very helpful coping strategy for people (McKendree-Smith, Floyd, & Scogin, 2003). Goal-setting, another coping strategy taught by the nurses, was also received favourably by those participants, and they reported being
subsequently able to recognize the efficacy of self-help in the management of their psychological distress.

As mentioned earlier, whilst there is ample evidence of the efficacy of CBT, other coping strategies are also beneficial. One such development has been with the exploration of coping using Mindfulness. These strategies have been combined with CBT, and are also a fundamental aspect of a newer, recently emerging therapy, known as Acceptance and Commitment Therapy (ACT) (Fletcher & Hayes, 2005). Mindfulness therapy will now be addressed.

3.8.1.2 Mindfulness

Mindfulness meditation is a formal intervention aimed at creating greater awareness and insight in participants (Shapiro, Schwartz, & Bonner, 1998). Mindfulness, which has been understood in relation to processes including acceptance and contact with the present moment, has been associated with alleviation of suffering for people who are psychologically distressed (Fletcher & Hayes, 2005). Through adopting mindfulness, one learns to pay attention to, and become aware of, events and experiences at the present moment (Brown, Ryan, & Creswell, 2007; Limprecht, 2008).

The results from early studies of mindfulness-based interventions, which integrated meditation and yoga into stress reduction programs, were positive (Kabat-Zinn, 1994). The various aspects of mindfulness are interrelated, so that people who predict fears and try to avoid their thoughts, are taught to accept them, without trying to change them, thereby shifting their attention to the present moment as dispassionate observers (Fletcher & Hayes, 2005). For example, people who participated in an 8-week stress reduction intervention based on mindfulness meditation, in which participants developed their awareness of the present moment, had significantly reduced anxiety and depression scores when measured after the program (Miller, Fletcher, & Kabat-Zinn,
1995). When the same people were followed up after three months, then three years, repeated analyses demonstrated that they had continued to experience the gains they made through participating in the mindfulness meditative practice. Thus, it was concluded, mindfulness meditation has a long-term impact on people who have anxiety-related disorders.

Measures of brain activity have shown differences between groups following mindfulness meditation training, associated with a reduction in anxiety and an increase in positive mood (Davidson, Kabat-Zinn, Schumacher, Rosenkranz, Muller et al., 2003). Mindfulness meditation strategies have become increasingly popular as a coping mechanism for people with mental health conditions (Limprecht, 2008). A meta-analysis of mindfulness and standard relaxation training found both to be equally able to reduce stress, but mindfulness also reduced the ruminative thinking found in depressed people, as well as reducing anxiety, and increasing empathy and self-compassion in healthy people (Chiesa & Serretti, 2009).

There is some evidence to support self-help using less well-researched therapies, such as exercise and treatments such as St John’s wort for depression (Jorm et al., 2002). The evidence for the efficacy of exercise as a coping strategy will now be discussed.

3.8.1.3 Exercise

Contemporary coping may also be discussed in relation to physical activities (Martinsen, 2000). In studies with community volunteers, regular exercise was found to be efficacious in reducing the symptoms of depression in some people (Lawlor & Hopker, 2001). However, in that systematic review of randomised controlled trials, these authors found that, although good quality research was lacking, doctors could recommend more physical activity to motivated patients as health benefits would be
anticipated. Exercise was found to improve the symptoms of depression and was effective in reducing psychological distress (Mead, Morley, Campbell, Greig, McMurdo et al., 2009).

In another study, exercise was found to improve the symptoms of depression and was effective in reducing psychological distress, possibly attributed to the physical impact of wellbeing which is felt through the release of endorphins, chemicals that promote a feeling of well-being (Mead et al., 2009). However, in a meta-analysis, Mead et al. (2009) found they were unable to state definitely which exercise was important in reducing the impact of psychological distress, as the results of the various trials considered had been reported differently, making it difficult for these authors to draw comparisons. For example, they found that different forms of exercise, such as aerobic or non-aerobic activities, were compared. The analysis also included exercise with, or without, a coach, and exercise that had been prescribed by a medical professional.

Engaging in exercise may involve socialising with other people, thus offering the potential for positive feedback from others. In turn, this may result in raised self-esteem. Another positive association between exercise, and social contact, or change of scenery, is the potential for the diversion from intrusive negative thinking. Thus, exercise has the potential to provide a feeling of success through an increased sense of mastery, and offer opportunities for increased social contact.

Seen as a pleasurable activity, exercise also contributes to CBT as a relapse prevention strategy in the management of depression, as shown in an on-line resource prepared by the “Centre for Clinical Interventions (CCI)”, a specialist state-wide program that is administered through North Metropolitan Health Services in Western Australia (http://www.cci.health.wa.gov.au/docs/BB-9-Self-Management).
3.8.1.4 Alcohol

The association between psychological distress, drinking alcohol at risky levels and low levels of exercise have been identified (ABS, 2006). Ellis (2004, p. 391) stated that other factors including “genes, childhood experience, previous trauma, social and cultural supports, physical factors … and stress” may contribute to an individual’s psychological distress. However, occupational issues, culture, and use of alcohol may impact on an individual’s coping strategies, and in turn, on his/her mental health. For example in workplaces where the use of alcohol is sanctioned, employees may be at risk for alcohol abuse (Wilhelm et al., 2004). In studies linking occupation and stress, suicide and substance abuse, links were drawn to a trend of heavy use of alcohol in adolescence and an association with later work issues in relation to alcohol.

In Australia, data from the 2007-08 National Health Survey (NHS) conducted by the Australian Bureau of Statistics, showed that 13% of the Australian population consumed alcohol at risky/high risk levels. The Australian Bureau of Statistics defined short-term risk, or “Binge drinking” as drinking above high risk levels, referring to risk of injury or harm, associated with consumption of more than seven glasses by males or five glasses by females on any one occasion. High risk was recorded in men aged 25-34 and 55-64 years. Of the 13% of women who were drinking at high levels, the highest proportion was in the 45-64 years age group.

Use of alcohol to cope with stress in university students was measured in a cross sectional study with psychology students (Flynn, 2000). The results indicated a significant link between daily alcohol coping and daily depressed mood \( r = 0.28, p < 0.01 \). The researcher reported that the presence of pre-existing depression may have led to inaccurate reporting of alcohol use by these participants, but when compared with a baseline, students in the sample tended not to report use of alcohol as a coping
mechanism. There were no gender differences found in the analyses conducted for that study.

3.8.2 Other community resources

There is ample evidence pertaining to the success of bibliotherapy (books), and other contemporary self-help resources, including web-based programs based on CBT, in managing psychological distress. Studies have shown that self-help using CBT was effective for people with psychological distress including stress, anxiety or depression (Anderson et al., 2005; Christensen, Griffiths, Korten, Brittliffe & Groves, 2004).

The evidence supports using various resources for coping with psychological distress among people who are receptive to a self-help approach. Self-help materials may include CBT programs written into books or other media, including internet programs, or resources which may be obtained through the telephone. Medical and other health professionals also offer and make referrals for people to obtain CBT and other support to cope with distress (Andrews et al., 2001). Some studies have also been located in which university faculties have provided CBT-based strategies and/or mindfulness-based resources to their students to assist them in coping with psychological distress (Rosenzweig et al., 2003).

3.8.2.1 Self-help

The internet enables computerised CBT and web-based programs to reach a huge audience. These self-help opportunities may be of particular assistance in helping people who are suicidal, or in a state of crisis. For example, a depressed university student in Scotland reported that he found help on-line (Bale, 2001). The student was feeling very distressed, but he credits his recovery from despair to an email response he received from a user in Australia. However, websites, useful for disseminating mental health information to people who may otherwise remain untreated, were not considered
to be as helpful as self-help materials from books (Leach, Christensen, Griffiths, Jorm, & Mackinnon, 2006). In that large-scale study with an Australian population, 53.7% rated a website as likely to be helpful, whereas 66.0% rated a book as helpful. Participants who rated these materials helpful, also believed it is better to deal with mental health problems on your own, thus the anonymity of websites may appeal to some people. This could therefore be one means of supporting psychologically distressed student-teachers who fear the stigma from peers or potential employers of seeking treatment. It could also offer a means for those placed in remote locations to access a service, and it offers a cost effective alternative for financially challenged university students.

3.8.2.1.1 Bibliotherapy

A systematic review of randomized controlled trials based on manual-based bibliotherapy for anxious, stressed and/or depressed patients located eight studies of self-help interventions (Bower, Richards, & Lovell, 2001). People were recruited to those studies through a General Practitioner (GP) which enabled comparisons to be made between relatively homogenous populations. Self-help materials were provided to people as text, video-tape, and/or computer text. In this review, there were some methodological issues, including sample size, which ranged widely from 22 - 150 patients, but overall, the findings indicated that those self-help materials were modestly effective in reducing psychological distress.

In a meta-analysis of other bibliotherapy for the treatment of depression, 11 randomised controlled trials (RCTs) of self-help books were located (Anderson, Lewis, Araya, Elgie, Harrison et al., 2005). These authors found that depression among people who read the US publication called “Feeling Good” did improve to a statistically significant extent. Overall, their study indicated that bibliotherapy was an effective
intervention for depression, although the evidence from other small studies included in
their systematic review was weak.

An Australian trial was conducted to compare self-help, psycho-education and a
brief group intervention, and ascertain who would, or would not, benefit from self-help
(Baillie & Rapee, 2004). The researchers measured psychological distress using the
Depression, Anxiety and Stress Scale (DASS), and also alcohol use, social phobia and
neuroticism. When followed up after nine months, the results did not support one
intervention over another for people who suffered from panic attacks. However, there is
evidence to suggest that self-help, based on a Cognitive Behavioural Therapy (CBT)
approach, was efficacious as a means of reducing psychological distress when it has
been offered through a variety of media, in several countries, as will now be explored.

3.8.2.1.2 Media-assisted CBT, websites and internet

Computerised and other media-based self-help materials have been prepared by
various sources, including, in Australia, by agencies such as the Joanna Briggs Institute
for Evidence Based Nursing and Midwifery (1999). These approaches have been tested
in clinical trials, and there is evidence that they have been effective in reducing
psychological distress (Churchill, Hunot, Corney, Knapp, McGuire et al., 2001; Hunot
et al., 2007; Jarrett, Kraft, Doyle, Foster, Eaves et al., 2001; Scott, Teasdale, Paykel,

3.8.3 Media-assisted programs

Based on CBT-based strategies, a variety of technological and media-assisted
programs have been shown to be effective among people from several countries,
including USA (Osgood-Hynes, Greist, Marks, Baer, Heneman et al., 1998), Britain
(Proudfoot, 2004), the Netherlands (Cuijpers et al., 2007), and Australia (Anderson et
al., 2005). For example, in the UK, a self-help audio-cassette tape of a CBT program,
“Coping With Depression”, was disseminated as part of a national government program (“Defeat Depression Campaign”) between 1992 and 1997 (Blenkiron, 2001). Following the program a pilot study was conducted to measure changes to patients’ attitude and knowledge about depression. Pre and post measures indicated that it had been effective, and 68% of patients reported that they were continuing to use one or more of the coping techniques as the resource had been helpful to them in coping with their depression.

British researchers also demonstrated that a computerised CBT program called “Beating the Blues” was a cost-effective resource as it provided an alternative to therapy for the management of psychological distress (McCrone, Knapp, Proudfoot, Ryden, Cavanagh et al., 2004). When the 8-week computerised program “Beating the Blues” was offered to emotionally distressed employees, who had been frequently absent, their depression and anxiety was reduced. From the results, it was concluded that participation in the program facilitated faster recovery from distress than conventional care among employees with stress-related absenteeism.

Americans, and others world-wide, use the Internet as a resource for psycho-education and self-help (Chang, 2005; Christensen, Griffiths, Groves, & Korten, 2006; Christensen, Griffiths, & Korten, 2002; Farvolden, McBride, Bagby, & Ravitz, 2003; Godin, Truschel, & Singh, 2005; Griffiths & Christensen, 2002; Hickie, Davenport, Scott, & Morgan, 2002; Zuckerman, 2003). Free computer-aided CBT was also provided at a London clinic to assist UK patients to cope with psychological distress (Gega, Marks, & Mataix-Cols, 2004). In that clinic, the patients were provided with one of four possible computer programs, and given access to therapists for brief advice only, by phone, or face-to-face. The result was that only an average of one hour of the therapist’s time was required, as compared with the usual eight hours given previously in treatment. There were significant improvements in psychological health, and people
were fairly satisfied with the computer-aided CBT, despite a preference for face-to-face treatment.

3.8.4 Websites and the Internet

Several studies of web-based CBT programs, offering coping strategies, were located. There was evidence that they had been effective resources for the management of psychological distress in many countries, including the UK (Marks, Mataix-Cols, Kenwright, Cameron, Hirsch et al., 2003; Proudfoot, Goldberg, Mann, Everitt, Marks et al., 2003; Proudfoot, Ryden, Everitt, Shapiro, Goldberg et al., 2004), China (Lin, Bai, Liu, Hsiao, Chen et al., 2007), Sweden (Stjernsvard & Ostman, 2006), the Netherlands (Spek, Cuijpers, Nyklicek, Smits, Riper et al., 2008), the US (Wright, Wright, Albano, Basco, Goldsmith et al., 2005), and Australia (Christensen, Griffiths, Mackinnon, & Brittcliffe, 2006).

The self-help web-based stress management program, offered to the general public in Sweden, consisted of psycho-education and six relaxation treatment modules. (Zetterqvist, Maanmies, Ström, & Andersson, 2003). The CBT modules included cognitive and behavioural restructuring, problem solving, time management and awareness of exercise habits and sleep behaviours. In post-treatment, there was evidence of reduced stress, anxiety and depression. However, whilst web-based CBT programs may offer an alternative, they too have had a high rate of participant drop out (Christensen, Griffiths, & Jorm, 2004).

Web-based self-help resources have also been referred to as minimal contact interventions (Andersson, Bergstrom, Hollandare, Carlbring, Kaldo et al., 2005) because they may be accompanied with some form of contact, including telephone calls from the researchers or internet programs which have been supplemented by emails (Clarke, Eubanks, Reid, Kelleher, O'Connor et al., 2005). This supplementary support to
the self-help strategies, offered through telephone calls or other reminders which may prevent people dropping out of web-based programs, was found to be both popular and effective coping resources among psychologically distressed people (Andersson, Lewis, Araya, Elgie, Harrison, Proudfoot, Schmidt, Sharp, Weightman & Williams, 2005; Carlbring, Gunnarsdottir, Hedensjo, Andersson, Ekselius, & Furmark, 2007; den Boer, Wiesma & Van den Bosch; Williams, 2003).

However, caution in using self-help sites on the internet has been suggested, including the fact that there is a lack of evidence of any formal review of the mental health materials and information, lack of timely updating of sites, potential conflicts of interest through advertising, lack of theoretical evidence and reading age which may be beyond those needing the information (Godin et al., 2005). Griffiths, Christensen, Jorm, Evans and Groves (2004) concluded that the internet was worth investigation as a means of reducing stigma when delivering programs for depression. However, in a follow-up review in which Griffiths and Christensen (2007) explored 15 Australian depression websites, they found that in general, access to Australian websites was poor. Thus, they recommended that the quality of information on Australian websites could be improved.

3.8.4.1 Health Practitioner support

A team from the Royal Australian and New Zealand College of Psychiatrists (RANZCP) reviewed the literature related to treatments for depression, and concluded that important factors include an effective relationship between therapist and patient, and that CBT and Interpersonal Psychotherapy (IPT) are effective, together with antidepressants. The psychiatrists also concluded that other evidence-based treatments may be effective as well (Ellis, 2004). For example, psycho-education, supplemented by problem-solving skills, was recommended as a treatment for people with mild
depression. The report pointed to factors which may predispose people to depression and these included stress and social support. Gender was also considered to be an important predisposing factor, due to depression being more common in women.

However, it has been argued that providing guidelines about what is appropriate treatment for a mental health or other conditions does not ensure that treatment recommendations will be followed by those for whom they were provided (Hickie & Blashki, 2006). Patients do not attend as many sessions as their General Practitioner (GP) may expect when referring them to a therapist for CBT, nor attend the number of sessions for which it has been designed. Waiting time for therapy may also be lengthy. For example, in the UK, it was reported that there was up to a two-year wait, therefore websites on the internet which presented coping strategies were considered to offer a viable alternative resource (Marks, 2004).

Results from a meta-analysis of web-based CBT confirmed that it is not so much the type of problem (psychological distress), but whether or not support is offered, for example, by phone, email or by a nurse in the doctor’s surgery that enhances the person’s coping (Spek et al., 2007). An exploration of contemporary Australian studies revealed that General Practitioners have recommended self-help resources and referred their patients for supplementary support to websites offering CBT strategies (Usher, 2007).

3.8.5 Resources available to university students

There is currently no “gold standard” for measuring the content of resources and interventions offered to university students (Shapiro, Shapiro, & Schwartz, 2000). Those authors found that the content of stress management programs varied considerably. Many interventions consisted mainly of group meetings which were held either between peers, or with leaders. The optimal duration of meetings was not known,
but ranged from two consecutive days to weekly hour-long meetings throughout the year. However, the medical students in the study found all programs were helpful.

A health promotion program was offered to all students at an American university, irrespective of faculty (Chudley E (Chad) Werch, Hui Bian, Michele J Moore, Steve Ames, Carlo DiClemente et al., 2007). The students’ health behaviours were explored, together with their techniques to manage stress. The results, following completion of the program, indicated improvements in drink-driving, exercise, nutrition and sleep habits, and an increase in use of stress management behaviours.

Whilst the school teaching role is increasingly complex and demanding, providing high quality teachers is critical (McKinsey & Company Education Report, 2010). In their report of teacher education, those authors suggest various reforms which could be adopted by US education authorities, at a systemic level, in order to better equip educators, and improve educational outcomes. These include changes in recruitment and training of teachers, but the authors acknowledged that there is no “silver bullet” (p. 5).

The outcome of consultations to determine an appropriate Australian national system for the accreditation of pre-service Teacher Education Programs indicates that pre-service teacher education programs will adopt, at a national level, strategies to secure future teacher quality (http://smarterschools.gov.au/Pages/default.aspx.). The “Smarter Schools National Partnership for Improving Teacher Quality” outlines the professional standards expected from student-teachers upon graduation. The emphasis is on the provision of quality teaching to ensure student learning and development, and requirements include ensuring students’ well being. However, no mention is made of training for student-teachers in stress management strategies, nor provision of other resources associated with personal well-being.
3.8.5.1 **Stress management programs based on CBT**

Stress management programs based on CBT have been offered by universities to their medical students, and the results of access to these resources have been associated with reduced levels of psychological distress among students (Redwood & Pollak, 2007). In Glasgow, medical students were surveyed about their stress and coping (Moffat, McConnachie, Ross, & Morrison, 2004). Positive coping strategies used by them were found to be based on CBT. These included active coping, positive reframing, planning and acceptance. Their negative coping strategies included avoidance strategies, self-distraction, denial and alcohol/drug use. Problem-based learning, increased guidance and feedback from tutors, and greater use of active coping strategies, were associated with lower psychological distress in those students, when compared with previous studies of students from non-problem-based learning medical courses.

In the UK, avoidance strategies, and denial have also been associated with medical students’ psychological distress, and those who were depressed were found to be highly self-critical (Firth-Cozens, 2001). To decrease negative outcomes, a variety of preventative interventions were recommended to increase hardiness, and the students were encouraged to use cognitive restructuring and other CBT strategies as coping skills, rather than denial and/or substance use. A Belgian university curriculum also incorporated 40 hours of training in stress management and communication skills for medical students (Bragard, Razavi, Marchal, Merckaert, Delvaux et al., 2006). The program aimed to enhance the medical students’ cognitions, and the behavioural approach enabled them to practice the CBT skills.

The internet may provide students with resources, such as programs to reduce the specific psychological distress associated with anticipated test anxiety. Prior to exams, UK university students were offered a CBT program on-line (Orbach et al.,
2007). That resource contained six modules. Each of the modules could be accessed independently by the students, and as often as they desired. The content of the modules included providing instructions for progressive muscle relaxation, cognitive behavioural and rational thinking strategies, study-skills advice and exam-stress relaxation strategies. When repeated-measures analysis of variance for test anxiety was applied, the results revealed that there had been a significant improvement (of more than two standard deviations above the mean taken at baseline), in the intervention group. That group showed that access to the on-line resource contributed to a greater reduction in their test anxiety.

3.8.5.2 Mindfulness programs

Mindfulness strategies are another resource which may be made available to help university students cope with their psychological distress. When mindfulness strategies were taught to university students at the University of Arizona, the results of follow up measures indicated that anxiety and overall psychological distress including depression had been reduced among those students (Shapiro et al., 2000). In that study, a face-to-face eight-week meditation-based stress reduction intervention was delivered, following which, results indicated that coping, using mindfulness-based strategies, results in reduced symptoms of psychological distress.

The impact of a ten-week Mindfulness-Based Stress Reduction (MBSR) program on the psychological well-being of medical students was also measured (Rosenzweig et al., 2003). When pretest and posttest results were compared, it was found that students’ tension and anxiety, and overall mood disturbance, had improved. At the conclusion of that study, 98% of medical students stated that they would recommend the course to both other students and patients.
3.8.5.3 *Psycho-education and social support*

A ten-session stress reduction elective entitled ‘Mind-Body Medicine’ was offered to Nursing and Medical students in Washington, USA (Finkelstein, Brownstein, Scott, & Lan, 2007). The psycho-education aspect of the program covered underlying theoretical concepts associated with stress, meditation and exercise. Skills were taught, then the students practised in group sessions, and they were also given homework.

Students’ anxiety, stress and depression levels were measured at the beginning, the conclusion, and three months after they had completed the stress reduction elective. There was a decrease in psychological distress among those students who participated in the program. Initially that group had higher stress and anxiety scores, but three months later, when measured for a second time, their stress and anxiety levels had decreased significantly in relation to the control group. Those improvements were sustained for a further three months, and the findings indicated that the program supported participants to develop and sustain use of those coping skills. However, whilst the techniques learnt had a lasting impact, the authors of the study also cautioned that the particular students who chose to participate, being already distressed, may have been more predisposed to gain from the techniques.

A wellness elective, based on stress reduction techniques, was also offered to medical students in Korea (Lee & Graham, 2001). In the analysis that followed, of the various coping skills described, talking to their peers was the strategy most frequently used. Students also reported that this peer support was a very useful coping mechanism. Support, from family and friends, was their second most valued coping strategy, followed by taking time-out. They reported that the provision of new coping strategies through the wellness training program was extremely helpful, and suggested it should be an essential aspect of university curriculum.
Norwegian medical students’ coping strategies also including seeking social support (Kjeldstadli, Tyssen, Finset, Hem, Gude et al., 2006). The study also explored students’ other strategies for managing their distress. These included taking a problem-focussed approach and/or focussing on emotions such as wishful thinking. The major finding from this study of coping mechanisms was that the students who used wishful thinking least were also those with the lowest stress levels.

3.9 Teachers and Student-Teachers’ Coping Strategies and Resources

Whilst stress management strategies and resources have been provided in universities for health professionals, pre-service programs for student-teachers lag behind the provision of stress management options provided for medical students. Student-teachers may regard the teaching Practicum as a valuable, if not the most valued, part of their teacher education program, but also consider it to be the most stressful.

Teaching is regarded as a stressful occupation (Kyriacou & Kunc, 2007). As teachers are required to address the complex mental health needs of school students, it has been argued that they require professional development and nurturing to develop their resilience and enhance their well-being (Woodward, 2006). This goal is consistent with research which addressed the effects of coping resources for teachers’ well-being (Parker & Martin, 2008). The authors argued that to be effective, and enhance teachers well-being in the workplace, interventions should be focussed on individuals’ coping strategies, not solely organisational issues. As predicted, they found greater well-being among teachers who adopted direct strategies, including mastery and planning, than among those teachers who avoided their problems.

Austin, Shah and Muncer (2005) analysed teacher stress and coping strategies, and found that many negative coping strategies were used. In this exploratory study
among UK secondary school teachers, whilst they did seek social support, their only
effective significant positive strategy was exercise. Relaxation was popular, but not
significantly associated with reduced stress, but, as there has been significant evidence
that it is effective, these authors argue that it should be continued in stress management
programs. Problem-solving had a negative relationship to stress, but teachers who were
more distressed were more likely to use negative strategies, such as escape avoidance to
cope with their stress.

Griffith, Steptoe, and Cropley (1999) had identified that teachers’ well-being,
typically assumed to be associated with the demands of their work, was moderated by
social support and coping. Disengagement was associated with higher work stress, and
those teachers were likely to put aside other activities to focus on their work, which
intruded in their home lives. Those teachers who were more stressed by their work had
elevated blood pressure and heart rate in the evening, which the authors suggested,
arose as they were less likely to relax after work.

Examination of teacher stress and the coping literature reveals that the extent of
psychological distress and coping by beginning teachers prior to beginning their
teaching careers, was not found. No literature examining stress management strategies
used by contemporary student-teachers has been found. What is known is that the
Practicum, during which student-teachers first engage in practice teaching in schools,
may be stressful for them.

Some research was located to indicate that praise, support and recognition may
ameliorate the professional demands associated with Teaching Practice, and that
student-teachers were psychologically distressed in response to student misbehaviour,
workload, inadequate facilities and other professional issues (Tuettemann & Punch,
1992). However, not all student-teachers engage in Practice Teaching at either a
Practicum, or during the six-week practical experience known as an Internship, nevertheless, they may be psychologically distressed (Zimmermann et al., 2008, 2008). Less research deals with how student-teachers cope with distress, particularly as related to their coping mechanisms, as well as practical school-based experiences. Therefore, the literature was explored to examine appropriate coping behaviours and the resources available to them.

### 3.9.1 Coping strategies and resources of student-teachers

Dedousis-Wallace and Shute (2009) found that materials presented to teachers to increase their knowledge of behaviours impacting on the mental health of their students was shown to have a limited effect, but the outcome from that study was the recommendation that a specific set of strategies and skill-based program may have the desired effect. A pilot study of a program provided to Early Childhood student-teachers prior to their two-week Practicum, was undertaken at an Australian university (Sumsion & Thomas, 1995). That was the student-teacher’s second Practicum. The impact of the program, which consisted of relaxation and visualisation techniques, was measured using surveys, and group discussion among students, pre- and post-Practicum.

When the surveys were analyzed, the quantitative results indicated no significant difference in psychological distress among those student-teachers who used the coping strategies; but as this was a pilot study, the sample size was small. Qualitative data from the group discussions enhanced the findings. In discussions, student-teachers indicated that they took several sessions to develop the relaxation techniques. Also, due to university work commitments, there was a fall in attendance at sessions. However, participating student-teachers reported that they felt themselves to be more relaxed than their peers, and less stressed post Practicum than they had been at their first Practicum.
Murray-Harvey et al., (2000) conducted another qualitative study in which data were gathered from undergraduate student-teachers at Flinders University who undertook two Practica at schools ranging from Junior Primary through to Upper Secondary, and across the Government, Independent and Catholic school sectors in South Australia. In that study, following qualitative analysis of the student-teachers’ responses, four coping mechanisms emerged. These were categorised first into personal coping strategies, which included positive cognitions, physical activity and relaxation, behaviour such as drinking and eating, humour, and time management. Their second category, referred to as professional coping strategies, included having knowledge of the curriculum, and self-management skills and being organized. Self-awareness, breathing and relaxation strategies were also recognised. Their third strategy, social coping was also important to student-teachers. They turned to family and friends to reflect, debrief and/or to defuse their stress. Their fourth strategy was to seek support from their school supervising teacher, other student teachers, and their university supervisor.

The focus of the Internship experience in Australia, as reported in *The Multiple Faces of Internships* Report (Queensland Board of Teacher Registration, 2004), has been to prepare student-teachers through the transition to teaching. In that Report, the stated aims of the Internship at Griffith University included a focus on classroom experiences, critical reflection and enhanced professional growth. No mention is made of managing stress. However, in order to retain beginning teachers, it has been suggested that training be made available to address lack of psychological self-management skills to help student-teachers adapt to their role (Stevens, Parker, & Burroughs, 2007).
As already outlined, psychological distress imposes societal burdens, and is likely to lead to productivity loss in the professions, including teaching. As systematic programs to identify and promote psychological care and treatment has significantly improved individual and workplace outcomes (Wang, Simon, Avorn, Azocar, Ludman et al., 2007), interventions provided under real-world conditions (Flay et al., 2005) should be considered for the benefit of student-teachers.

3.9.2 Stress alleviated by supervision and support

The presence of adaptive coping resources in people’s environment may act as protective buffers against stress for them. In a study of employees in a higher professional education institute, specific job resources were found to act as a buffer against the demands of the role and employee burnout (Bakker et al., 2005). These resources included social support, high quality relationship with one’s supervisor, autonomy, and constructive feedback. Exhaustion and cynicism were strongly correlated with work overload, emotional demands, unfavourable working conditions and home-work interference. Of these, autonomy was the most significant buffer. However, high levels of resources buffered the impact of work overload on exhaustion.

Whilst teaching is stressful, how a student-teacher copes may also be buffered by their ability to self-manage, particularly with so many changes, including technological development in the profession (Dyson, 2005). Collaborative approaches to the Internship in Queensland, identified in both the report on Internships in education, The Multiple Faces of Internships, (Queensland Board of Teacher Registration, 2004), and the inquiry into Australian teacher education, Top of the Class (Hartsuyker, 2007), form part of an induction process for assisting student-teachers in their transition to teaching. The “capstone” experience, an intensive period of reflection during which student-teachers are encouraged to reflect, develop and refine “their individual and
group learnings for the semester” (2004, p. 8) is suggested. Mentoring is also recommended to assist student-teachers develop a teaching identity, and the report suggests that Internships should be fully-integrated into pre-service training, be flexible, and that the experience be a “mentored experience” (Hartsuyker, 2007, p. 14).

The *Top of the Class* report also suggested different models for Practica, and partnerships in teacher education. The recognition that the teaching profession is increasingly complex and demanding, and that in order to achieve high quality teaching in schools, high quality teacher education is crucial has been reiterated in the report into education by McKinsey and Company (2010). That report argued for more rigorous selection and teacher training “more akin to medical school and residency” (McKinsey & Company, 2001, p. 7), and that candidates should go through their interviews to judge their motivation and emotional intelligence. They do not refer to resources to support student-teachers, or the impact of stress, as has been found among medical students (Khoo & Tan, 2007).

As outlined, there may be reluctance among university students in obtaining professional treatment for depression, due to the perceptions associated with mental health from the community, university staff, potential employers and even health professionals (Barney et al., 2006), so psychologically distressed student-teachers may also be fearful of acknowledging depression, anxiety or stress in case it impacts adversely on their professional future. They may believe that they cannot seek help for a mental health condition, because this may impact negatively on their likelihood of obtaining positive feedback from their Internship supervisor. Psychological distress may also be perceived to negatively influence teaching authorities, such as the Queensland College of Teachers, which is responsible for registration of teachers and decisions about the school employment and placement of student-teachers upon registration.
(Queensland College of Teachers, 2007). Thus, acknowledgement of psychological distress may be seen to subsequently restrict gaining professional employment as a teacher.

Whilst the school teaching role is increasingly complex and demanding, providing high quality teachers is critical (McKinsey & Company Education Report, 2010). In their report of teacher education, those authors suggest various reforms which could be adopted by US education authorities, at a systemic level, in order to better equip educators, and improve educational outcomes. These include changes in recruitment and training of teachers, but the authors acknowledged that there is no “silver bullet” (p. 5).

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### 3.9.3 Other factors which may impact on coping in student-teachers

#### 3.9.3.1 Sleep

One resource that may impact on the student-teacher’s ability to cope may be the amount of sleep they have. Regardless of the individual student-teacher’s capacity to manage the demands of the profession, s/he may be sleep-deprived when trying to
prepare for the Internship, and this can impact on an individual’s bodily functioning (Pilcher & Huffcutt, 1996). Pilcher and Huffcutt (1996), in a meta-analysis, found that as well as cognitive and motor performance, mood is affected by sleep deprivation. As well as contributing to depression, insomnia was also found to be a risk factor in the development of anxiety disorders (Mendelson, 2008). The presence of insomnia, or sleep deprivation, which may be a part of, or signal a return to anxiety and depression, affects up to one third of the population (Ohayon & Roth, 2003), and may therefore also be associated with the psychological distress of student-teachers. Other resources that may impact on the student-teacher’s ability to cope could be related to exercise, as earlier discussed (Mead et al., 2009), and gender.

3.9.3.2 Gender

A study of gender difference conducted in the UK with all primary and secondary school student-teachers who were undertaking a Post Graduate Certificate of Education Course, showed that females are more stressed by the Teaching Practicum (Brember, Brown, & Ralph, 2002). In that study, questionnaires were administered to 30 males and 74 females. Overall, the males were less stressed by the practicum than the females, but the study had limitations. The sample sizes were too small, and the skill-set required was too dissimilar for conclusions to be made about gender-differences between primary and secondary school student-teachers. The coping strategies also varied between genders. Females reported that they used the support of friends and family/partner to cope with stress during the practicum, but the males were more concerned about having the support of pupils. Thus, it could be hypothesized that females access more coping resources, including social supports, to cope with the stress of the practicum, than do males.
In Singapore, females in a sample of first-year student-teachers, generally found the Practicum experience more stressful than did males (D'Rozario & Wong, 1996). In Australia, the historical trend has been that Primary School teachers have been predominantly female. This may be due to the perception that this is a continuation of the traditional female primary care-giver role. Nation-wide, in 2003, 76% of primary school teachers were female, and 23% of those in government schools were aged between 45-49 years of age (Ministerial Council on Education Employment Training and Youth (MCEETYA), 2004).

In an Australian study with 541 West Australian teachers, Punch and Tuettemann (1991) found that as the number of stressors increased, so did the likelihood of psychological distress. However, they also reported that when there were a minimal number of stressors, males were more stressed than females, but females were more stressed when the number of stressors increased.

3.10 Barriers to Management of Psychological Distress

3.10.1 Non-adherence to treatment strategies for coping with psychological distress

Prevalence of psychological distress has been recognized, and there is ample evidence of effective treatments being available, but patients may not accept or adhere to the recommended treatments. In an attempt to overcome non-adherence to the advice of General Practitioners (GP), a factor found to impede treatment, depressed patients were provided with self-help materials and supported by a medical practice team (Ijff, Huijbregts, van Marwijk, Beekman, Hakkaart-van Roijen et al., 2007). The self-help manual in this collaborative care Amsterdam study, included self-relaxation techniques, diet advice, and exercise in the form of running therapy, as this had been shown to be
effective in the treatment of mild depression, and in promoting patients’ return to work. Problem solving and anti-depressant medications were also available. This strategy was useful in overcoming treatment barriers.

### 3.10.2 Stigma associated with mental health

Another barrier to therapy for depression is stigma, which may be from peers or even the treating health professionals, as primary care health providers have also been found to have a negative approach to the mentally ill (Barney et al., 2006; Lapshin, Wasserman, & Finkelstein, 2006). That behavior by professionals perpetuates stigma and negative labelling of those who have a mental illness. Therefore, some people who fear stigma, embarrassment, or who expect that health professionals may react negatively to them, are, understandably, loath to try to locate sources of assistance (Barney et al., 2006).

### 3.10.3 Availability and costs associated with resources

Access to mental health professionals may be difficult, because there may be a shortage of trained therapists (van den Berg, Shapiro, Bickerstaffe, & Cavanagh, 2004), or therapy for the management of psychological distress may be prohibitive due to the financial costs (Churchill et al., 2001). One method for overcoming the barrier of high costs of interventions has been the development of internet-based programs (Griffiths, Christensen, Jorm, Evans, & Groves, 2004; Mihalopoulos, Kiropoulos, Shih, Gunn, Blashki et al., 2005). Van den Berg et al. (2004) found that internet-based programs were cost-effective. In addition to the cost advantage of computer-aided and web-based self-help resources, these programs were found to be useful in overcoming barriers, and times when the demand for CBT exceeded the supply of trained therapists.
3.10.4 Lack of knowledge about mental illness

As well as the availability of treatment being a barrier, Thompson, Hunt and Issakidis (2004) identified that lack of knowledge about mental illness was among the most common reasons given by members of the general Australian population when surveyed about reasons for the delay in first seeking treatment for mental health problems. In Australia, new funding models have also enabled health providers other than General Practitioners (GPs) to provide appropriate mental health services (APS, 2007). Through the “Better Access to Mental Health Care” initiative, GPs can make appropriate referrals to other mental health practitioners, and this medicare-funded team approach may also reduce the considerable cost of treatment (Hickie, Davenport, Luscombe, Scott, Mackenzie, Morgan, Wilson, Barton & Barrett, 2006). Loss of life through suicide, although a repressed issue not widely discussed (Puschel & Schalinski, 2006), it has been highly associated with depression among teachers, engineers and physicians (Lindeman, Läärä, Vuori, & Lönnqvist, 1997; Puschel & Schalinski, 2006). The reluctance to seek professional help, as found in the community, is also found among university students. Medical students, over-represented among suicide victims, may camouflage their own psychological problems because they fear occupational and personal discrimination.

In a study by Tija, Givens, and Shea (2005), suicidal ideation among university students was determined through responses to questions such as “Have you ever considered committing suicide?” In that American study, 15.2% were classified as depressed, but, of these students, only 26.5% had received treatment. Younger students (aged between 22-24 years), were less likely to seek treatment. Thinking about suicide was associated with being older than 24 years, and/or having had a previous diagnosis of depression. Treatment options included counselling (6%), medication (12%), or both
counselling and medication (12%). Reasons for not seeking treatment included lack of time (53%), inadequate number of sessions available on campus (27%), stigma of using mental health services (23.1%), fear of negative impact on career (23.1%), and fear that a diagnosis may be entered on their academic record (23.1%). Others reported that they had concerns about being recognised by the university mental health staff, or they were of the opinion that treatment would not help.

An earlier American study reported similar findings (Givens & Tjia, 2002). The data from that survey indicated that depressed medical students under-utilised treatment. Barriers to the use of mental health services by these depressed students at the University of California, included lack of time and confidentiality, the stigma of mental health care, feeling that their problems were not important or would not be understand, seeking treatment would be seen as a weakness, or that problems may be documented on their academic record.

In a Swedish study (Dahlin & Runeson, 2007), university students’ worry about the future, financial concerns, exhaustion and personality contributed to their anxiety, depression and burnout. However, very few sought help for their psychological distress. Students at Manchester University were also reluctant to seek help, due to views about the stigma associated with mental illness (Chew-Graham et al., 2003). Respondents reported that they would prefer to seek help and support from their family and friends, rather than use the services provided by the university, as they believed mental illness may be viewed as weakness. Feelings of shame and embarrassment, and a fear of confiding in a tutor, contributed to avoidance of help-seeking behaviours by those experiencing a mental illness. In addition to the stigma, they also reported feeling that their problems may not be treated confidentially, and/or if people knew, it could affect their future career prospects.
### 3.11 Barriers among Teachers and Student-Teachers

Although it is known that Practicum stress is predictive of psychological distress, university students (Chew-Graham et al., 2003), and some student-teachers, may be hesitant to address mental health issues (Chaplain, 2008). If psychologically distressed student-teachers remain untreated, there may be a range of consequences at both a personal and professional level, among this group.

The most serious impact of depression, loss of life through suicide, has been highly associated with depression among the professions, including teaching (Lindeman et al., 2007; Puschel & Schalinski, 2006). Because of student-teachers’ reluctance to seek help, left unrecognised or untreated, anxiety may further complicate their psychological distress (Campbell & Uusimaki, 2006). Thus, the impact of not managing their psychological distress may result in serious consequences for individual student-teachers, the teaching profession and society (Wilhelm et al., 2003).

Where there is shortage of trained therapists, or when individuals prefer the anonymity of computerised self-help, as well as the convenience of logging on to a program in one’s own time (24/7), then the time saved in travel, or having access to a program when situated in a geographically remotely location, computerised CBT programs may be the answer (van den Berg et al., 2004). Developments of the technology have resulted in evidence-based techniques being made available on-line, and these coping tools, which can be readily modified, enable the user to obtain instant support regardless of their geographic location (Kenardy, McCafferty, & Rosa, 2003). This could be valuable in overcoming the barriers of distance for student-teachers who are posted to rural and remote regions in Australia, or who undertake their Internships internationally.
3.12 Chapter Summary

This literature review chapter provided, in Part A, an exploration of the literature pertaining to the prevalence of psychological distress, and the impact on the general population, university students, teachers, and, where possible, among student-teachers. The literature was then examined for associations between personality, and personal and professional demands associated with psychological distress. In Part B, the literature was explored for coping strategies used by university students, teacher and student-teachers. Resources provided in the community, programs offered in university faculties and barriers which may preclude university students and student-teachers from seeking help when psychologically distressed, were also addressed.

Although the literature seems replete with evidence of psychological distress in the general population, and among university students and teachers, the common finding was that working as a practicing teacher is strenuous and challenging, and as such, causes significant amounts of psychological distress. Thus one could reasonably expect to find similar studies that have examined psychological distress, and literature detailing coping strategies among student-teachers. However, the dearth of literature may be a consequence of researchers not perceiving that teacher-education is stressful, or due to a failure to consider the link between psychological distress in individuals, the education process, student-teachers and their coping strategies and resources.

The literature suggests that cognitive behaviour therapy (CBT) is effective in reducing the symptoms of anxiety and depression (Beck, 2005). Self-help CBT may be an effective coping resource (Christensen, Griffiths, Korten, Brittliffe, & Groves, 2004; den Boer et al., 2004), with programs being made available through books and, with and without the support of therapists, on the internet. There is also evidence to support the effectiveness of mindfulness alone and in conjunction with CBT, as a coping resource...
Some university stress management programs have been offered, mostly in the fields of health and medical education. These programs provide effective coping strategies, and have been recommended for reducing the impact of psychological distress in medical students (Shapiro et al., 2000).

In community-dwelling patients with depression, websites offering information about depression or cognitive behaviour therapy reduced depressive symptoms. Mindfulness-based stress reduction (MBSR) programs and exercise were effective interventions in the management of depression. Cognitive behavioural therapy (CBT) programs were the basis of many effective interventions, for members of the general population, university students and teachers, as well as relaxation and social support. As self-help can be offered via technology, it may be particularly useful to people who believe they could be stigmatised if they approach a professional for help with a mental health issue. The professional support provided to student-teachers by a Mentor Teacher, or university supervisor, has been shown to be effective in helping them manage the stresses associated with the practical teaching experience.

The next chapter examines the development of a new theoretical framework, based on the exploration of two main theories, to examine the broad research question, and to provide a structure to address the seven specific research questions in this thesis.
Chapter 4 Theories of Demands and Coping with Psychological Distress

In this chapter a theoretical framework is developed for exploring the theory underpinning the research questions of the thesis. This framework provides an interpretative tool to address the hypotheses contained within the seven specific research questions. The dichotomy between quantitative and qualitative research (Mertens, 2005), the strengths and weaknesses of both quantitative and qualitative methods and their contribution to the decision to use a mixed method research design to best fit the researcher’s theoretical framework are set out in Chapter 5. The contribution of this theoretical framework to analyses of the quantitative data presented in Chapter 6, and the qualitative data in Chapter 7 are considered in the Discussion in Chapter 8.

In this chapter, theories leading to the development of the Demands, Coping and Well-being theoretical framework are explored. Two main theories which contribute to the new framework, their limitations for this research, and other evidence-based approaches for exploring the theory which underpins this thesis, are discussed. The broad research question for this thesis is then restated in terms of the new theoretical framework, and finally, a synopsis of the chapter is provided.

The theoretical framework addresses the seven specific research questions, from which hypotheses were developed to understand the extent of student-teachers’ psychological distress and their coping strategies. Hypotheses one to four were formulated to test psychological distress, measured as Depression, Anxiety and Stress, among primary school student-teachers who are in their final year of an undergraduate teaching degree. Thus, the first hypothesis (H1) is that student-teachers will be significantly psychologically distressed, and the second hypothesis (H2) is that student-teachers’ psychological distress is positively associated with their emotional stability and conscientiousness personality characteristics, and negatively associated with
extroversion and mastery personality characteristics. The third hypothesis (H3) is that student-teachers’ personal demands are positively associated with their psychological distress, and the fourth hypothesis (H4) is that psychological distress increases in relation to the professional demands of the Internship.

Hypotheses five to seven are formulated to test student teachers’ use of coping strategies and resources, and barriers that may preclude them from seeking help, to manage their psychological distress. Hypothesis five (H5) is that contemporary student-teachers may turn to technology for self-help programs based on mindfulness and cognitive behavioural strategies, seek emotional release with friends and family, drink alcohol and use exercise to manage their psychological distress. The sixth hypothesis (H6) is that their professional resources will include their peers, the University Internship Co-ordinator, Mentor Teachers, and health practitioners. The seventh and final hypothesis (H7) is that some student-teachers are reluctant to draw attention to their psychological distress due to stigma surrounding mental health issues, and their perception that it could impact on their teaching career options arising from the Internship.

The theoretical framework for this study of psychological distress among Australian primary school student-teachers is drawn primarily from two theories, the Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2007) and the Teacher Stress Cycle (TSC) theory (Mayo-Wilson & Montgomery, 2007). In order to explore the hypothesis that they are psychologically distressed, but have limited recourse to evidence-based coping strategies, aspects from those two main theories, together with cognitive behavioural and mindfulness-based approaches, constitute the basis for a new framework.
The new Demands, Coping and Well-being (DC-W) theoretical framework developed for this thesis integrates the different perspectives of the JD-R theory, with its focus on the ameliorating impact of external job resources on job demands in the general population, and the TSC theory which is focussed on teachers’ internal emotional coping responses. These theories provide a framework for understanding student-teachers, their Internship demands, and coping strategies. However, in order to understand their existing psychological distress, to provide more focus on their coping approaches, and to understand any associations between their Internship, and well-being strategies found in programs provided to other university students, a framework to explore student-teachers’ psychological distress and associated features was developed.

In the Demands, Coping and Well-being (DC-W) theoretical framework psychological distress is the main focus. The framework integrates and extends the JD-R and TSC theories to provide an understanding of the context of student-teachers’ psychological distress prior to, and during a six-week Internship, and their associated coping strategies, including evidence-based and media-delivered programs, barriers and community health resources. As the new theoretical framework was based on the JD-R theory and the TSC theory, the major contributions of each, and their strengths and weaknesses, are now presented.

4.1 The Job Demands-Resources Theory

The main assumption underlying the first theory, the ‘Job Demands-Resources’ (JD-R) theory, is that employee well-being is based on dual processes. Bakker and Demerouti (2007) described these two parallel processes as levels of well-being, or burnout, associated with the demands of work, and levels of motivation associated with the organizational resources available. Thus, the first process is:
“… every occupation may have its own specific risk factors associated with job stress, [and] these factors can be classified into two general categories (ie job demands and job resources)” (p. 312).

The second process is that, psychologically, employees who are supported through feedback and other resources are less likely to be cynical, and more likely to be engaged. Thus they are more likely to achieve their goals, and therefore they will feel more successful and motivated (Bakker & Demerouti, 2007).

**Figure 4.1** The JD-R model (Bakker & Demerouti, 2007).

### 4.1.1 Job Demands

In the unidirectional JD-R theory, the characteristics of the job are referred to as ‘demands’. These demands are seen to arise from the physical, psychological, social, and organizational aspects of work. For example, a person may have to work under great pressure, or they may have to endure emotionally demanding interactions with clients, both of which require consistent effort, which may lead to energy-depletion and
health problems. Thus, the impact on a person who is stressed by these demands can be impaired health, sleeping problems, work overload and exhaustion.

### 4.1.2 Job Resources

The JD-R theory also refers to ‘resources’ used by individuals to manage the demands of work, and the different impact of the demands, according to individual motivation. An example of what Bakker and Demerouti (2007) meant by job demands and resources, demonstrating their theoretical framework, was evident in a study they conducted with employees in a Dutch call centre. In that workplace, absenteeism, turnover and employee well-being was predicted by social and supervisory support, referred to as ‘resources’. Their JD-R theory was also applied to a study with university employees. In that study, neither personal demands and responsibilities nor emotional demands or work overload impacted significantly on well-being when the employee had a positive relationship with their supervisor. In this important relationship, positive factors included the provision of constructive feedback to the employee, allowing the employee to experience autonomy in his or her role, and the employee’s social support was also an important resource.

Hakanen, Bakker and Schaufeli (2006), in a study addressing professional demands among Finnish teachers, also provided evidence supporting the Job Demand-Resources model. The results from this study indicated that there was an association between the job demands and ill-health of the teachers. However, the authors also found an association between teachers’ engagement, which arose from the teachers’ access to job resources, and commitment to their work.

As in the studies with the Dutch call centre and university employees mentioned above, important job or professional resources which buffered the Finnish teachers from the demands of the job included supervisory support, being appreciated, and
experiencing a positive organizational climate. For those teachers, the professional resources were considered to buffer the negative aspects of teaching. For example, their resources diminished the otherwise negative impact of student misbehaviour. The dual process approach further supported the Bakker and Demerouti hypothesis that job demands were associated with absenteeism, whilst providing teachers with support was predictive of organizational commitment.

The JD-R theory identifies that job resources may influence a person’s motivation. For example, resources may include salary and career opportunities, professional support, feedback and role autonomy. Individual’s support systems have been found to buffer them against the effects of stress (Cohen & Syme, 1985). In a study with Chinese pre-service teachers, Chan (2002) also found that personal and social support resources impacted on stress and psychological distress.

In this JD-R theory, it is assumed that when certain demands are high and resources are limited, job stress, exhaustion, or burnout will develop. Thus, when jobs are demanding mentally, emotionally and physically, employees may not have time or energy to adequately recover after their sustained efforts at work. Then, being mentally and physically exhausted by those professional demands, people may be too tired to draw on their usual coping resources, and this, in turn, can lead to, or further exacerbate, their psychological distress. However, job resources may buffer the impact of the demands.

In this JD-R theory, it is proposed that the impact of job demands may be cushioned by an individual’s resources, and instead of becoming disengaged, individuals who are well resourced, as shown in Figure 4.1, may be motivated to work hard, even if the job is demanding. Job resources which moderate the impact of the strain include a quality relationship with ones’ supervisor, positive appraisal and
feedback, autonomy, and career and financial rewards. Social support, which includes an individual’s sense of belonging, can also moderate the impact or buffer the negative effects of stressful events, such as work overload (Schwarzer & Knoll, 2007).

4.1.3 Strengths of the Job Demands-Resources Theory

The Job Demands-Resources’ (JD-R) theory appears to be useful for analysing the impact of professional work demands on individuals. It also highlights that demands are associated with most jobs. Bakker and Demerouti (2007) also argue that individual factors, such as a person’s motivation, mitigate the impact of work, and they explain how work can be modified for the benefit of a more productive workforce.

The JD-R theory provides an overview of the general demands of work, and a link in understanding how job resources contribute to a person satisfying their basic needs. The theory predicts that an employee is likely to meet their work goals when motivated through appropriate feedback, and this theory can be adapted to include student-teachers, whose Internship represents professional work. Feedback that fosters learning, stimulates personal growth, and increases the likelihood of employees being professionally successful may be viewed as Mentor Teachers’ feedback to student-teachers during the Internship.

Assumptions in this theory are that demands and the resources may be specific to an occupation, but that the resource of leadership appreciation may protect employees from the demands which could otherwise result in ill health. As student-teachers’ psychological distress is a focus of this study, the JD-R theory may be applied to student-teachers when engaged in teaching practice during an Internship. For example, student-teachers will be faced with professional demands related to workload when at their Internship, including the pressures of time management, as they complete all the requirements for their Mentor Teacher, the University Internship Convenor, and
Teacher Education Authorities (time pressure), the demands of managing student behaviour and managing relationships with staff and parents (recipient contact), the demands of different school environments (physical environment), and working at home and on weekends to prepare lesson plans (shift work).

Bakker and Demerouti (2007) provide both an understanding of the impact on workers in general, including psychological stressors associated with work, and a way of understanding the underlying psychological processes of these demands in conjunction with resources which may buffer that impact, including social and organisational supports. The JD-R theory is based on the assumption that regardless of occupation, the demands of work evoke stress, but this stress may be buffered by social and supervisory support (Bakker, Demerouti & Euwema, 2005).

The theory, adapted to the demands and resources applicable to student-teachers when engaged in professional work during their Internship, provides for exploration of the professional demands of the student-teachers’ Internship. It also draws attention to the kinds of resources likely to be available to student-teachers, such as feedback from Mentor Teachers (feedback and supervisor support), career opportunities (rewards and job security), and the opportunity to design individual lessons and engage in co-curricular activities (job control and participation).

4.1.4 Weaknesses of the Job Demands-Resources Theory

As outlined in the literature review in Chapter 3, the teaching profession is well known for being emotionally demanding, as teachers have to work under various pressures. The demands on student-teachers include the stress of a heavy workload and difficulties in managing student behavior. Other occupation-specific challenges, including a constantly changing and overcrowded curriculum, on-going adaptation to new governmental regulations and new technologies, and issues relating to
administration, communication with colleagues and parents, and career development issues (McKinsey & Company, 2010), are not addressed by this theory, as it is not specific to teaching. Furthermore, the JD-R theory says little about the range of non-work demands and resources likely to affect student-teachers, such as financial stresses and other personal demands, and individual coping strategies.

Some personality characteristics, and mastery, are inner resources that people draw upon to withstand the impact of adverse events in their environment (Pearlin and Schooler, 1987) as shown in Chapter 3.7. Examples of resources identified in the JD-R model which align to the teaching profession may be organisational issues related to salary, career opportunities, supervisor and co-worker support, team climate, participation in decision making, skill variety, autonomy and performance feedback. For student-teachers, organisational support may be made available through supervision arrangements, and when made available to them, this resource may potentially buffer the effects of any demands associated with their Internship. This supervisory resource may be in the form of a supportive relationship with a Mentor Teacher and/or a supportive relationship between the student-teacher and their University Internship Convenor.

Resources specifically used by student-teachers to manage psychological distress may also include support from medical and other health professionals, but they are not addressed by this theory. Thus, by excluding these professional resources, the internal strengths of the student and their personal coping strategies, the theory does not exhaust the full range of factors that help student-teachers to be engaged, and cope with their role demands.
4.2 The Teacher Stress Cycle Theory

The second theory is an empirical model of construct relationships, referred to in this thesis as the ‘Teacher Stress Cycle’ (TSC). Developed by Montgomery and Rupp (2005), this theory is focussed on strategies used by teachers for coping with stress. Coping has been defined as the actions and behaviours people take, consciously, to avoid being harmed by the ordinary demands of life (Pearlin & Schooler, 1978). Life’s demands may refer to external stressors, or the demands may be related to events that a person internalises as being stressful and beyond their resources to cope. Thus, coping has been discussed in the literature with regard to cognitions and behaviours people use to manage their emotionally distressing experiences (Lazarus, 1993). That author suggested that coping should be viewed as both a style and a process, based on an understanding of personality as well as the context of the distressing event or situation, and the cognitive and behavioural efforts people used to manage their psychological distress.

Montgomery and Rupp’s (2005) theory addresses the personal and professional demands, or external stressors, made upon individual teachers, with an emphasis on the active or passive coping strategies teachers use, and outcomes, or emotional responses, associated with those strategies. The JD-R does not address the important set of personal and teaching specific professional demands, but the TSC explores the influence of environmental stressors, personal support and personality, and their impact on teachers.

Montgomery and Rupp’s (2005) Teacher Stress Cycle theory, shown in Figure 4.2, outlines the interactions between personality, environment and personal support, with emotional responses and individual coping resources adopted by teachers in
response to external personal and professional demands. The demands referred to in this theory include:

1. Personal Demands e.g. domestic details, relationships, finances.
2. Professional Demands e.g. student-behaviour, administrative and collegiate support, work load and the environment.

The theoretical framework addresses the characteristics of the individual, the school environment, and the demands made upon individual teachers including relationship problems, and financial responsibilities. The TSC theory addresses teachers’ various coping mechanisms. Montgomery and Rupp (2005) used a cyclical framework to examine coping. Their theory explores the potential for burnout associated with the impact of external stressors, the demands of teaching, and their coping strategies, surrounded within the individual teachers’ background characteristics, including personality, personal support available and the structure of their work environment. According to their theory, teachers’ coping strategies depend on their appraisal of stress associated with professional and personal demands.

In the TSC theory, in addition to coping strategies used, the impact of demands vary with individual teachers’ personality characteristics, and the support they receive, referred to as a resource. The teacher is the central figure in the TSC theory. As such, the theory provides for an exploration of teachers’ reactions to external events.

**4.2.1 The Teacher Stress Cycle coping strategies**

In the Teacher Stress Cycle (TSC) theory, teachers appraise external stressful events, including personal and domestic problems, such as relationship or financial issues, and the characteristics of their professional life, such as student and general work demands, and then engage coping strategies to manage these stresses (Montgomery & Rupp, 2005). The TSC theory includes two kinds of strategies. Montgomery and Rupp
(2005) refer to coping strategies as either active or passive coping resources. The first kind, active coping, referring to teachers’ cognitions, behaviours, emotions, and health, is associated with positive emotional responses and teacher satisfaction.
In this theory, active strategies teachers adopt include cognitive coping strategies, such as changing irrational thoughts, behavioural strategies such as relaxation exercises, emotional strategies such as thinking positively and strategies for physical health (Montgomery & Rupp, 2005, p. 465). According to the theory, teachers who adopt active cognitive strategies place themselves at a distance from the problem, think positively and rationally about the situation, and respond with calm behavior. In the TSC, cognitive and behavioural coping strategies also include planning, and having a positive orientation towards teacher mastery.

Montgomery and Rupp (2005) argue that teachers also adopt a second kind of strategy, passive coping, and this is associated with negative behaviours including avoiding dealing with their problems altogether, wishful thinking, or being resigned to problems, due to a belief that they themselves are unable to contribute to solutions. Those teachers may be defensive about problems, or minimize them, to feeling unable to influence the outcome or the impact of a stressful event or situation. Passive coping strategies, also include drinking alcohol, result in teacher dissatisfaction, and negative emotional responses may lead to teacher burnout.

The impact of stress on teachers is included in the Teacher Stress Cycle theory and explained in accordance with the individual’s personality, and its influence on whether or not the individual seeks social support when facing stress. In their theory, personality is viewed as a stable inner characteristic that predisposes some teachers to external stressors. In addition, the extent to which teachers are supported by their environment “bosses and colleagues” (Montgomery & Rupp, 2005, p. 466), and their family and friends influence the process by which teachers deal with stress. Having appraised the external stressor/s, teachers engage in either positively or negatively
oriented emotional responses, which in turn, impacts on the level to which they then experience emotional exhaustion and burnout.

4.2.2 **Strengths of the Teacher Stress Cycle theory**

The Teacher Stress Cycle theory provides an understanding of the impact of demands and outcomes specific to teachers. Various active and passive coping strategies and emotional responses are addressed, as well as the potential for personality characteristics to mediate the impact of personal, professional, social and institutional stressors among teachers.

The Teacher Stress Cycle theory, based on a meta-analysis of the teacher stress literature, is suited to this study of student-teachers, as it goes beyond job demands and more closely investigates the personal demands and coping strategies used by participants in this study, namely student-teachers. Montgomery and Rupp’s (2005) meta-analysis explored teacher demographic characteristics, the individual teacher’s personality, the professional resources available to support teachers and associated health-related outcomes.

The TSC theory provides a framework for addressing teachers’ coping in response to their work demands, and resources associated with coping, including cognitive, behavioural, and emotional coping strategies, and health (exercise), as well as personality characteristics specific to teachers. Coping strategies are associated with positive experiences, leading to hope and enjoyment, whereas passive coping strategies including resignation, avoidance and wishful thinking are associated with a negative experience, leading to dissatisfaction, anxiety, frustration, depression and suicidal ideation.

The behaviour discussed in Montgomery and Rupp’s (2005) theoretical framework may lead to negative experiences being associated with the stressor. They
suggested that for some teachers, the stress associated with teaching, or the demands of work, may be experienced as negative. They also suggested that whilst stressors such as the characteristics of a school environment may be external, stress may arise from other directions, such as the internalised stress arising from personal problems in the life of a teacher. Montgomery and Rupp (2005) argue that these factors, in turn, may result in “anxiety, frustration, depression or even suicidal ideation” (p. 465).

4.2.3 Weaknesses of the Teacher Stress Cycle theory

Personal influence, or the extent to which one believes one can influence important life events (Krokavcova, Nagyova, van Dijk, Resenberger, Gavelova et al., 2008), has been associated with good health and lower levels of stress (Younger et al., 2008). The Teacher Stress Cycle incorporates aspects of personality, but does not account for whether or not personality and mastery factors are associated with psychological impact, Internship demands, or barriers to coping in the student-teacher population.

Whilst it is known that coping does change according to context (Lazarus, 1993), little is known regarding the relationship between coping and professional demands, such as those associated with the Internship undertaken by fourth year primary school student-teachers. For example, Lazarus (1993) found that seeking social support in one situation was not necessarily linked to the likelihood that a person would seek social support in another situation. However, Chan (2002) found social support was a protective factor for teacher stress management. Given the potential cohesion and collegiality that would be expected to develop among student-teachers over four years of study together in an undergraduate degree, the impact and role of these associations, and other associations with resources provided through the university, remain to be tested.
4.2.4 Justification for integrating these theoretical frameworks

Simply combining the two theories is not sufficient to overcome some of their limitations. One limitation concerns the sample population, and another relates to assessment of the prevalence of psychological distress in this population. Bakker and Demerouti’s (2007) framework is useful for examining principles for the general population which have been derived from people's responses to stressors associated with life’s challenges, including work, relationships and illness, and Montgomery and Rupp’s (2005) framework is useful for examining coping strategies used by teachers. However, exploration of psychological distress among a contemporary cohort of student-teachers, who may have specific demands or resources, is not addressed by these two theories. Thus, even by reviewing both theories, with regard to student-teachers, the theoretical framework remains incomplete for answering the research questions.

Therefore, an integrated framework was constructed, to combine and extend these theories in ways that permit a more detailed exploration of demands, resources and coping strategies, with an emphasis on psychological distress among student-teachers, who are subject to the professional demands of a six-week full-time Internship, and evidence-based CBT and mindfulness-based approaches.

4.3 Development of the Demands, Coping and Well-being Theoretical Framework

Whilst together, the Job Demands-Resources (JD-R) theory and the Teacher Stress Cycle (TSC) theories provide the potential for understanding the link between adults’ work demands and resources, and teachers’ personal demands, personality characteristics and some coping strategies, a new framework was needed to explore the prevalence of student-teachers’ existing psychological distress, if it increased in relation
to their Internship, and if it reduced, whether or not there were any significant associations between it and evidence-based coping strategies.

Psychological distress has serious health implications (Gonda, Fountoulakis, Kaprinis & Rihmer, 2007; Norton, Norton, Asmundson, Thompson & Larsen, 1999), it is a factor in sick leave and absence from work (Donaghy, 2004), therefore, it may be significant in student-teachers’ even before they are exposed to the demands of teaching (Rantanen, Kinnunen, Feldt & Pukkinen, 2008). However, concerned about the stigma surrounding mental health issues (Barney, Griffiths, Jorm & Christensen, 2006), and their future employment opportunities as teachers, they may be reluctant to seek professional support (Chaplain, 2008). Cognitive behavioural (Lee & Graham, 2001) and mindfulness programs (Rosenzweig, Reibel, Greeson, Brainard & Hojat, 2003) have been shown to enhance other university students’ well-being. Also, theoretically, evidence that the least psychologically distressed student-teachers use the same cognitive or mindfulness strategies would suggest that, prior to entering a known stressful occupation, where Faculties of Education have little control over supervision or on-going support for student-teachers, similar programs be provided to prepare student-teachers for their teaching role.

The two main theories from which the new framework was developed identify characteristics of personal and work demands and resources that are assumed to be associated with the burnout process, and personality characteristics, which potentially influence the impact of personal, professional, social and institutional stressors among teachers. These variables, together with mastery, associated with well-being (Verger et al., 2009), were incorporated into the new Demands, Coping and Well-being theoretical framework, which is focussed on psychological distress.
4.4 The Theoretical Framework Developed for this Thesis

An integration of the Job Demands-Resources (JD-R) and Teacher Stress Cycle (TSC) theories constitute the basis for the theoretical framework to be used in this thesis. The JD-R theory contributed an understanding of psychological processes underlying work and the buffer effect of professional resources in countering job demands, which in this case refers to the Internship, and the TSC theory contributed to an understanding of coping mechanisms used by teachers, and an association with personality. To contribute further understanding of contemporary student-teachers’ psychological distress, and the contribution of those theories to the new theoretical framework, relevant theories and variables are now described.

4.4.1 Additional coping theories and strategies

To narrow the focus from understanding the prevalence of psychological distress among university students (Wong, Cheung, Ma & Tang, 2006), to student-teachers and their coping strategies and resources, the Demands, Coping and Well-being framework also integrated other coping theories associated with the management of psychological distress, including: a) cognitive behavioural theory, b) mindfulness theory, c) the role of exercise, and d) social support were integrated into the new theoretical framework. These theories are now addressed, as well as barriers which may limit the mental health of student-teachers.

4.4.1.1 Cognitive Theory

The psychology literature (Marks, 1980; Rey, 2002) into cognitive behaviour strategies, including challenging irrational thoughts, engagement in activities and problem solving, makes it clear that these strategies are fundamental to understanding what active coping strategies are used by teachers. These strategies, and related professional resources, are assessed in order to address the research questions of this thesis.
In cognitive theory, individuals evaluate the demand, and respond in accordance with their cognitive appraisal or perception of an event. Responses will differ, as one person may perceive a situation to be stressful and feel threatened and anxious, whereas for another the same circumstances may represent a pleasurable challenge (Lazarus & Folkman, 1984). Positive, active coping resources used by individual student-teachers are thus explored in terms of Cognitive Behaviour Therapy (CBT), which may be undertaken with an allied health provider, or alone, as self-help (Aisbett, 2001; Beck, 2005; Kidman, 2006).

Traditional CBT strategies relate to changing thoughts by disputing the evidence, and changing one’s view of the situation thorough cognitive restructuring (Hayes, 2004). This therapeutic approach, and the theory that underpins it, were developed by Ellis (1969) and referred to as the ABC model. The techniques developed to address psychological distress are based on the premise that new, more adaptive behaviours may be learnt. In Ellis’s model, these assumptions are explained as event(s) that trigger an emotional reaction(s), referred to as A (the environment), which, in turn, triggers thoughts about the situation or event (B), referred to as self-talk, and this, in turn results in an emotional response, such as depressed mood (C).

Basic learning theory, which incorporates laboratory research into conditioned fear responses, further underpins the cognitive-behavioural approach, and is derived from understanding behaviour as a response to internal and external conditions, or thoughts about the environment (Hazlett-Stevens & Craske, 2002). Managing psychological distress requires the individual to identify and challenge, dispute or change any underlying beliefs and thoughts which may be irrational, and lead to depression (Parslow, Christensen, Griffiths, & Groves, 2006). For example, as discussed by Parslow, et al., (2006), as it is not possible to be perfect, a thought, or self-
talk, such as: ‘I must be competent’, which may be a stressful and demanding thought, could be replaced with a more rational statement to self. In this example, the disputing statement to that thought may be: ‘No one is perfect all the time, and I accept myself with strengths and weaknesses’.

Cognitive behaviour theory has been successfully adapted and used as self-help by the general public (Gregory, Canning, Lee, & Wise, 2004), and university students (Finkelstein et al., 2007) to manage psychological distress. Thus, it is included in the theoretical framework to examine the effects on psychological distress if student-teachers use it as a resource to manage their Internship. Self-help cognitive coping strategies included in the current framework include cognitions and self-talk; structured relaxation; and positive thoughts and behaviours to weaken automatic irrational thinking, feelings of powerlessness and to help set up experiences of enjoyment (A Plus Project Manual, 2002; Parslow et al., 2006).

In Australian studies, teachers’ coping strategies have been linked to taking a realistic view, being knowledgeable, cognitively aware, and skilled in delivery of the curriculum (Murray-Harvey et al., 2000). Cognitive coping strategies used by teachers in that study (Murray-Harvey et al., 2000) are incorporated into the integrated theory to be used by student-teachers to manage their personal and professional demands, and their psychological distress.

4.4.1.2 Mindfulness Theory

Mindfulness has been defined by Marlatt and Kristeller (1999) as “bringing one’s complete attention to the present experience on a moment-to-moment basis” (p. 68). Mindfulness theory encompasses behaviours in which individuals are required to focus on the present moment, rather than worrying about the past and how things should have been different. If focussed on the past, rather than potentially experiencing further pain, the theory suggests that one may avoid experiences completely, and this can lead
to negative functioning and/or imbalance. Conversely, worry about the future may focus the individuals on fear of what could happen, and preclude them from taking any action.

Mindfulness concepts, which have existed for thousands of years according to ancient Buddhism as an approach to coping by transcending suffering, have been more recently developed by Kabat-Zinn (1994). The theory of mindfulness as he explained, involves “paying attention in a particular way: on purpose, in the present moment, and non-judgementally” (p. 4). Kabat-Zinn (1994) integrated Eastern practices into a Bio-Psycho-Social Model of Mindfulness-Based Stress Reduction (MBSR), and these strategies were found to be effective when offered through a program to people who were coping with pain (Miller et al., 1995). Mindfulness theory and practices were found also to be efficacious in recent clinical trials with healthy populations (Chiesa & Serretti, 2009), and mindfulness-based interventions were found to be effective in treating anxious people (Miller et al., 1995). When included with mindfulness meditation, yoga was also found to be effective for the management of chronic pain (Segal et al., 2002).

Mindfulness enables the individual to disengage from the literal meaning of the thought as being the only true interpretation of an event and simply to view it as an emotion or thought, and thus to respond differently (Walser & Westrup, 2007). Mindfulness theory and yoga, a positive self-help resource, were considered to be appropriate contemporary inclusions in the development of this theoretical framework.

4.4.1.3 Exercise
In addition to CBT and mindfulness theory, health behaviours associated with exercise have been systematically reviewed (Lawlor & Hopker, 2001). Exercise was assessed as important for reducing depression, and was referred to favourably as an active coping resource in the TSC (Larun, Nordheim, Ekeland, Hagen, & Heian, 2006), therefore it is included as a resource in this new theoretical framework.
4.4.1.4 **Barriers to seeking help**

The premise underlying the integration of the JD-R and TSC theories is that work may be stressful, but this psychological distress can be reduced by using appropriate strategies and having access to resources. The Australian Psychological Society (APS, 2007), as part of the Australian Government’s Department of Health and Ageing “Better Access to Health Care initiative”, prepared a resource manual consisting of strategies to assist allied health practitioners in treating psychological distress. As members of the general community, student-teachers can find support to develop coping strategies from that resource, together with practitioner support. Similar support can also be made available to employees at an organisational level. However, it is known that, regardless of the resources available, some university students who are psychologically distressed do not seek help. As outlined in Chapter 3, whilst university students may repeatedly experience psychological distress, for a variety of reasons, they do not acknowledge or obtain treatment for their mental health.

4.4.2 **Integration of the theories into a Demands, Coping and Well-being (DC-W) theoretical framework**

Both the dual process and the buffer effect from the JD-R theory and the coping strategies from the TSC were considered when developing the theoretical framework for this research study with student-teachers.

4.4.2.1 **Application of the Job Demands-Resources theory**

For the purpose of developing a theoretical framework to answer the research questions of this thesis, the “demands” aspects of the JD-R theory in the Demands, Coping and Well-being (DC-W) theory refers to student-teachers’ exposure to professional demands which may be experienced prior to, and during their Internship. In the school environment during their Internship, professional demands include time and student behaviour management, and technology and curriculum issues.
It was expected that the cognitive and emotional demands and the specific role demands associated with the teaching role would be significant, and that the individual’s personal resources, including their personality, mastery, and cognitive and emotional competencies, as well as social resources, and potential support from Mentor Teachers and the University Internship Co-ordinator, would impact on their psychosocial well-being (Lorente, Salanova, Martinez, & Schaufeli, 2008).

The concept of job resources in the new framework has been extended to include a reference to specific mental health professionals, as theoretically this resource available to all members of the Australian community, would be used by student-teachers. By referral from a GP, individuals can access counsellors and obtain evidence-based cognitive behavioural support. University students may also access free, on-site health support services. Some university faculties also provide well-being program options or include them within the curriculum.

4.4.2.2 Application of the Teacher Stress Cycle theory

Coping Theory, explained by Lazarus (1993), emphasises that efforts to manage stress may change over time, according to personality, or the adaptive processes adopted by an individual. It was expected that student-teachers’ coping would change over time, in accordance with the impact of their life-demands and their responses to the professional demands of their Internship, their personality, and the way they used cognitive strategies to actively interpret and cope with demands in their environment.

The Teacher Stress Cycle contributed an understanding of the relationship between the demands on teachers, referred to as external stressors, and the resultant impact, which may be psychologically distressing. In the new DC-W theoretical framework, personal demands are considered to be those that arise from what is described as personal life. The relationships between the individual teacher’s reactions to external stressors, such as student behaviour, school structure, administration,
workload, and collegiality, and their active or passive coping behaviours, together with their personal and environmental support, and personality mediators, as explored in the TSC, are elaborated in the new theory.

4.4.3 The Demands, Coping and Well-being (DC-W) theoretical framework

Two major theories underpinning this thesis are incorporated with cognitive behaviour and mindfulness concepts, to a) identify the demands on contemporary student-teachers, how they cope with psychological distress, and the resources they use, and b) to measure these coping strategies against an external, potentially stressful professionally demanding Internship. This is called the Demands, Coping and Wellbeing theoretical framework (DC-W) and is presented in Figure 4.3.

In the new theoretical framework, depression, anxiety and stress are regarded as psychological distress, central to the framework. In the DC-W theory it is assumed that student teachers are psychologically distressed but it will be exacerbated by demands which may in turn be influenced by personality and mastery, and that coping strategies and resources may alleviate the severity of their distress unless barriers preclude them from seeking help. These assumptions are deduced from the literature and predictions about psychological distress and its impact in the general population (WHO, 2005).

The DC-W theory asserts that there is a relationships between Personal and Professional Demands, Personality and Mastery, Personal and Professional Coping Strategies, Barriers to help-seeking and Psychological Distress. It is posited that domestic aspects, shown to impact on teacher’ personal lives and influence their “overall emotional, cognitive and behavioural state” (Montgomery & Rupp, p. 465) will also impact on student-teachers’ well-being, as will Internship demands, including time pressures and school student behaviour, and that the strain on student-teachers may lead to exhaustion and health problems as they are training to become teachers.
Figure 4.3 *The Demands, Coping and Wellbeing (DC-W) theoretical framework*
The personality characteristics explored in this new framework were based on the traits of extroversion, emotional stability, and conscientiousness. Mastery is another factor that may buffer individual teachers from the effects of stressful demands. In this thesis, mastery refers to the extent to which student teachers see themselves as being in control of stress in their lives (Younger et al., 2008). In this DC-W theory, student-teachers’ personality characteristics and mastery are expected to provide a buffer against the effect of stressful personal and professional Internship demands.

As outlined in the literature reviewed in Chapter 3, cognitive behaviour therapy (CBT) and mindfulness strategies are found in many evidence-based programs dealing with coping and stress management. Passive or negative coping resources, such as avoidance, or excessive use of alcohol, which, if used as a means of coping, may be associated with a more negative experience (Flynn, 2000), and other limiting emotional responses, such as self-blame are also included in the framework.

The Demands, Coping and Well-Being theoretical framework provides links between personal and professional demands and resources, and psychological distress. Coping is addressed as a process, with some emphasis on personality traits and mastery, and explained in terms of cognitive and behavioural efforts to manage psychological distress.

*Coping Strategies* generated from the TSC contribute to hypotheses of the DC-W theory, which is further enhanced with the inclusion of conceptualisations based on cognitive theory, mindfulness, and health behaviour including exercise, drinking alcohol and self-help, on student-teachers’ psychological distress. The JD-R theory contributes an understanding of the positive contribution of *Resources* on employees’ motivation, and in the DC-W theory, resources to help student-teachers cope with the demands of their Internship also include allied health services (available to all members
of the Australian public), on-campus support (available through university health services), and peer support. Also included are professional resources such as the support of peers, University Internship Convenor and Mentor Teachers.

Among severely depressed university students, psychological distress is associated with suicidal feelings, but the stigma that precludes some students from seeking help may also be a barrier which prevents psychologically distressed student-teachers from seeking help. The DC-W theoretical framework incorporates a Barriers label to identify whether or not student-teachers fear acknowledging mental health problems in case it impacts on their chances of securing a positive rating by their Mentor Teacher at their Internship, or harms their career prospects.

The DC-W theoretical framework is not uni-dimensional. Figure 4 shows the strength of the connections and linkages to Psychological Distress of Demands, filtered through personality and mastery, and Coping Strategies and Resources, also impacted on by Barriers. These broadly defined concepts encompass the following variables:

4.4.3.1 Demands
The new Demands, Coping and Well-being (DC-W) theoretical framework shown in Figure 4.3, suggests links between student-teachers’ personal and professional demands.

4.4.3.2 Personal Demands
Personal demands refer to student-teachers’ personal responsibilities. It is hypothesised that these may include family and other work commitments which they may have to manage during their Internship, as well as financial and other concerns, and these in turn may impact on student-teachers’ psychological distress.

4.4.3.3 Professional Demands
Professional demands include university academic demands, and the teaching demands student-teachers experience in relation to their Internship. These are predicted
to impact on student-teachers’ psychological distress, particularly when measured immediately prior to, or following their Internship.

4.4.3.4 Personality and Mastery

It is hypothesised that the extroversion, emotional stability and conscientiousness personality characteristics, and mastery, may be associated with the impact of psychological distress experienced by student-teachers, thus these factors will be measured, and are highlighted in the DC-W theoretical framework.

4.4.3.5 Psychological Distress

It is anticipated that some student-teachers will have significant levels of psychological distress when measured at the beginning of their final year, and it may increase in association with their Internship. As illustrated in the theoretical framework, it is hypothesised that there is an association between personal and professional demands, personality, mastery and depression, anxiety and stress. The theory is also that, in addition to demand factors, personal coping strategies, professional resources and barriers will impact on student-teachers’ psychological distress.

4.4.3.6 Coping Strategies and Resources

The new Demands, Coping and Well-being (DC-W) theory incorporates psychological distress and coping strategies, resources and barriers to help-seeking, so as to make predictions, such as whether or not student-teachers use coping strategies, and if so, which strategies may predict better personal or professional outcomes (Parker & Martin, 2009) for student-teachers.

4.4.3.7 Personal Coping Strategies

The DC-W theory posits links between student-teachers’ psychological distress and personal coping strategies including CBT, mindfulness, self-help, support from family and friends, and exercise. It also suggests links to their stress management strategies including drinking alcohol, and behaviours such as disengagement.
4.4.3.8 **Professional Resources**

This aspect of the DC-W theory is incorporated to measure the hypothesised contribution of student-teachers’ professional support systems including health practitioners, their peers, and their Mentor Teachers or the University Internship Co-ordinator on their psychological distress.

4.4.3.9 **Barriers to help-seeking**

This is included into the DC-W theoretical framework to measure the predicted association between student-teachers being fearful of obtaining help when psychologically distressed, and their levels of depression, anxiety and stress.

### 4.5 Chapter Summary

In this chapter, a new theoretical framework was presented for use in analysing the data in Chapters 6 and 7. It draws on aspects of the Job Demands-Resources (JD-R) and Teacher Stress Cycle (TSC) theories as well as cognitive behavioural and mindfulness strategies, to permit examination of the hypotheses, formulated in response to the seven specific research questions, to be addressed by the Demands, Coping and Wellbeing theory.

In the JD-R theory, Bakker and Demerouti (2007) argue that the demands of work contribute to employee exhaustion, but resources, such as the appreciation of one’s leaders, can buffer the strains associated with work overload, thus resources can act as a protective factor for employees against ill health, as well as motivating them to meet the demands of the job.

The TSC theory provides a framework for constructing relationships between teachers’ reactions to external events and their cognitive, emotional or behavioural coping mechanisms, influenced by personality, and their work and personal supports (Montgomery & Rupp, 2005). Both theories assume that stressors and protective factors have an impact on the levels of stress experienced by employees. Other theories, based
on research in counselling and psychotherapy, are also drawn upon. These further address cognitions and both positive and negative strategies used by people to manage distress. Positive strategies include CBT, mindfulness and active behaviours such as exercise, whereas negative strategies refer to alcohol abuse, avoidance of stressful situations and events and withdrawal.

The two theoretical frameworks form the basis of the Demands, Coping and Well-Being theory, used to clarify the extent to which personality, mastery, personal demands, the timing of the Internship, and coping strategies and resources are associated with depression, anxiety and stress among student-teachers. The new integrated theoretical framework provides a mechanism for an exploration of the interactive effects of the personality characteristics of extroversion, emotional stability (neuroticism) and conscientiousness, levels of mastery and personal demands on student-teachers prior to, and following, their Internship.

The Demands, Coping and Well-being theoretical framework uses as its key concepts the prevalence of psychological distress among student-teachers, the impact of personal demands and the professional demands of their Internship, and their personal coping strategies and resources. It was hypothesised that the psychological distress of student-teachers would be associated with the student-teachers’ personality traits, their sense of mastery and personal demands and responsibilities in their daily lives. It was also hypothesised that their psychological distress would increase in relation to the professional demands of the Internship, but that their well-being may be linked to the coping strategies and resources they used to manage these demands.

As described in the remaining chapters of the thesis, this study uses the new Demands, Coping and Well-being theoretical framework to examine the relationships between pre- and post- Internship measures of psychological distress, professional
demands, resources, barriers and an exploration of changes over time, in accordance with the professional demands of the Internship. Coping strategies are also explored in relation to the personal demands and responsibilities of individual student-teachers.

This new Demands, Coping and Well-being theoretical framework is based on the assumption that the individual student-teacher’s coping strategies are cognitively organised, that behaviour occurs as a consequence of cognitions, personality and mastery factors. The personal and professional demands made on a contemporary cohort of student-teachers, and the resources they adopt prior to, during and after their Internship can be explored using this integrated framework, as can factors associated with the prevalence of psychological distress, and barriers that may preclude them from reaching out for help when distressed.

The strength of the Demands, Coping and Well-being theoretical framework is that it provides a structure for drawing inferences, and conclusions, in response to the theory that student-teachers' well-being may be associated with demands and their coping strategies. It provides a basis for replication in future studies undertaken with the broader contemporary national and international, primary school student-teacher population, to further examine the hypotheses of the seven specific research questions.
Chapter 5 Research Design and Method

This chapter outlines the principles shaping the design and conduct of this research, based on the literature relating to research, which has influenced its conceptualisation and implementation. First in the chapter, the reasons for locating this thesis within a pragmatic research paradigm for which the theoretical framework was developed are provided. The design, method and ethical issues relating to the study are outlined, and then the setting and characteristics of the student-teachers are outlined. Standardised scales, namely the Depression, Anxiety and Stress Scale (DASS), Ten Item Personality Inventory (TIPI), Pearlin-Schooler Mastery Inventory (PSMS), Alcohol Use Disorders Identification Test (AUDIT), and Brief COPE, and existing instruments, such as the Survey of Practicum Stresses (SPS), that were used to construct dimensions for quantitative measurement, and the structure of the three questionnaires for data collection are described. This is followed by an explanation of the qualitative method used to gain a deeper understanding of the student-teachers in the study. Finally, data collection and management issues, research stages, and data analysis processes are described.

Using a mixed methods approach to collect data, three questionnaires were administered during the fourth year of the Bachelor of Primary Education degree, to provide baseline, pre Internship and post Internship data, and a qualitative method was included to complement the major foci of the quantitative methods. Qualitative data were collected through open-ended questions and responses given in the spaces provided on each of the three questionnaires, and from student-teachers’ observations made at four Cluster Group meetings in the field, and recorded by the researcher.

5.1 Theoretical Context and Research Design

Theory and principles underpin the approaches taken to answer research questions. Research may be classified through reference to different research paradigms. In this thesis, the research problem is central, thus, by being problem-centred, it fits a
pragmatic paradigm (Mackenzie & Knipe, 2006). The design chosen captures and describes the views of student-teachers, by communicating the researcher’s ontological, epistemological and methodological beliefs (Grix, 2002).

The methodology links the theoretical framework described in Chapter 4 to the methods selected for collecting, and analysing, the data (Mackenzie & Knipe, 2006). Philosophically, mixed method research is aligned with this pragmatic paradigm (Tashakkori & Teddlie, 1998). Thus, the mixed method approach to data collection and analyses was considered to be the most appropriate to fit this research design, which entailed sequentially, using anonymous, self-administered questionnaires, measuring quantitative data, information from individual written responses, and further qualitative data from Cluster Group meetings. The mixed method approach enables quantitative and qualitative data to be addressed to test the seven hypotheses arising from the specific research questions. This method is now described.

5.1.1 Mixed methods

The study used a mixed methods data collection approach, to allow student-teachers to express their experiences in different ways, and add richness to the data set (Creswell, 2007). Johnson and Onwuegbuzie’s (2004) definition of mixed methods, namely

“...the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (p. 17)

forms the basis for this thesis. The mixed methods strategy is frequently adopted by educational researchers (Alexander, 2006). In this thesis, both quantitative and qualitative data were collected and analysed in order to reveal student-teachers’ interpretations. The two approaches, whilst different, together enhance interpretation of the data obtained. This method offers deeper explanations of student-teachers’ well-
being, and fulfils the scale development procedures recommended by Creswell (2007), including a theoretical basis, development and review of questionnaire items, pre-testing, and validation (p. 124).

Standardised measures enable replication of this research. Individual student-teacher’s responses, collected systematically using quantitative data, were analysed using the Statistical Package for the Social Sciences (SPSS) version 17, a quantitative data analysis tool. Additional insights were provided by inquiry, through open-ended questions and spaces for individualised responses included in the three questionnaires, and from analysis of student-teachers’ responses at Cluster Group meetings, which were conducted mid-way through their Internship. The advantages and disadvantages of both quantitative and qualitative data collection methods were considered in the development of the questionnaires used to test the hypotheses and answer the research questions posed by this thesis. Major advantages and disadvantages are shown in Table 5.1.

<table>
<thead>
<tr>
<th>Method</th>
<th>Instrument</th>
<th>Aim</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>Questionnaires (three) incorporating standardised and non standardised instruments</td>
<td>To test the theoretical framework</td>
<td>Standardised data collection</td>
<td>Lacking in depth, may not capture all responses</td>
</tr>
<tr>
<td>Qualitative</td>
<td>Questionnaires (three) incorporate open-ended questions, space for spontaneous &amp; unconstrained responses, field notes from cluster groups</td>
<td>To understand the meaning behind student-teachers’ responses</td>
<td>Identification of issues that may have been overlooked</td>
<td>Results not replicable</td>
</tr>
</tbody>
</table>

Mixed methods enable the collection of data to test the theoretical approach developed to address primary school student-teachers’ psychological distress and their coping strategies. The mixed-method approach aims to enhance the fit between the experiences and insights provided, so that outcomes can be interpreted into a workable finding. These two methods are now discussed in turn; first quantitative, then qualitative.
5.1.2 Quantitative method

The literature in teacher education helped identify the parameters of knowledge for this project, based on prior research in the field in the fixed survey, or questionnaire, format. The major advantage of using a quantitative method is that data collection could be standardised. In purely experimental laboratory research, causal conclusions may be drawn. In this thesis, by using quantitative methods, statistical analyses could also be conducted to describe the data, and assess the strength and direction of relationships between measured variables to assist in constructing future predictions.

A quantitative method was also used to test the integrated Demands, Coping and Well-being (DC-W) theoretical framework developed in Chapter 4, to describe the phenomena in this study, namely, the prevalence of psychological distress among student-teachers; their personality characteristics and mastery; personal demands and those demands associated with the Internship; coping strategies and resources; and help-seeking barriers they may have adopted. By using carefully documented quantitative methods, there is the potential for the research to be replicated, using the same standardised instruments and the same strategy.

5.1.2.1 Advantages of using a Quantitative method

One advantage of using quantitative method is that the data are precise, responses givens are independent of the researcher, and research findings can be replicated among other populations (Burke Johnson & Onwuegbuzie, 2004). The scales incorporated into the questionnaires aimed to elicit standardised responses. Another advantage of quantitative method is that data can be obtained from a large number of participants.

Quantitative method enabled the independent variables, gathered as demographic data, including gender, age, marital status, educational data, and family
and personal responsibilities, to be linked to psychological distress, the dependent variable (DV). As data pertaining to identical variables could be collected at three separate time periods, using questionnaires, this quantitative method, explained in research stages (see Chapter 5.6), enabled analyses of the prevalence of psychological distress among student-teachers.

Further, quantitative data were also collected to discuss personality characteristics, mastery and professional demands that may be associated with distress and the Internship, and also coping strategies and resources associated with mental health and well-being outcomes. These variables were measured using seven sub-scales, namely, measures of psychological distress, extroversion, neuroticism and conscientiousness personality characteristics and mastery, professional demands, and active, cognitive and mindfulness-based coping strategies, professional resources, negative strategies, and barriers to help-seeking in primary school student-teachers. Questionnaire responses also provided information regarding demographic features and personal demands.

The questionnaire format enabled examination of the variables’ validity and reliability. Thus the researcher could ensure that the questionnaires were testing what they were supposed to, and questionnaire reliability provided future test-retest options. Correlations could be assessed from the quantitative data collected from questionnaires in this research, and predictions for the future may also be drawn from these analyses, as discussed in Chapter 8.

5.1.2.2 Disadvantages of using a Quantitative method

One weakness of quantitative research is that the categories selected by the researchers potentially do not necessarily reflect the participant’s understandings (Burke Johnson & Onwuegbuzie, 2004). Attrition may also impact on the findings possible, as
the researcher cannot guarantee that participants will complete all items on questionnaires, nor can the researcher be certain that participants will return them.

In this research with primary school student-teachers, the categories and instruments were selected, based on prior research with teachers and student-teachers, and linked with their reported experiences in their practicum (Aktekin et al., 2001; Campbell & Uusimaki, 2006; D'Rozario & Wong, 1996; Murray-Harvey et al., 1999; Sumson & Thomas, 1999). However, in order to enhance their responses to standardised questions, it was decided to supplement the quantitative data with other data, namely qualitative method, which will now be addressed.

5.1.3 Qualitative method

As identified above, a weakness identified in qualitative research is that “the researcher may miss out on phenomena occurring because of the focus on theory or hypothesis generation (called the confirmation bias)” (Burke Johnson and Onwuegbuzie, 2004, p. 19). Thus, this research used a mixed-method approach, because the addition of student-teachers’ responses to open-ended questions, and responses given at Cluster Group meetings in the field, contributed further to understanding the impact of their Internship, and their coping strategies.

5.1.3.1 Advantages of using a Qualitative method

A qualitative approach was intended to illustrate and clarify details provided in response to the questionnaires, and promote understanding of coping strategies and resources used by student-teachers to manage any distress prior to, or during their Internship. The qualitative data shed further light on the student-teachers’ experiences and responses, by providing more details about phenomena that were difficult to otherwise convey. Qualitative inquiry provided a strategy to understand “the meanings

The qualitative data were gathered through supplementing the standardised measures with open-ended questions, and providing space on the questionnaires for individual explanations, and was designed to probe for further understanding. By providing student-teachers an opportunity to expand on their Likert-scale responses to the questionnaires, subsequent responses could add meaning and authenticity to the findings. The rich data from these individual responses were thematically analysed, and are presented in the results in Chapter 7, and discussed in Chapter 8. Further data, in the form of field notes, were gathered from student-teachers at Cluster Group meetings held mid-way through their Internship.

The qualitative method aimed to bring individual student-teachers’ own sense of meaning to the research. Details of their personal experiences, when described in response to open-ended questions and in response to the questions posed by their University Co-ordinator at cluster group meetings, were expected to enhance the understandings of the phenomena being studied, and add perspective to the results. As a result of this multi-method approach, by collecting both quantitative and qualitative data, the validity of the research was enhanced.

5.1.3.2 Disadvantages of using a Qualitative method

There are some weaknesses to qualitative research. These include the difficulty of interpreting responses, the time required to analyse each individual response, and the lack of results which can be precisely replicated (Burke Johnson & Onwuegbuzie, 2004). However, because quantitative data may lack the in-depth information which may be provided by qualitative findings, and miss the actual life experiences that can enrich the
student-teachers’ responses to set questions, these difficulties may be addressed through incorporating qualitative and quantitative data in a mixed-method approach.

Three written questionnaires, based on the literature in the field of psychological distress (see Chapter 3.4) and coping (see Chapter 3.9), were devised. These questionnaires incorporated standardised and non-standardised items (see Appendices). The content of the questionnaires is further described in Chapter 5.4.

5.1.4 Ethics clearance

This research followed appropriate ethical standards and procedures required by Griffith University. The university conducts research in accordance with the National Statement on Ethical Conduct in Research Involving Humans. An application was made to the Griffith University Human Research Ethics Committee and provisional ethical approval for the Study to proceed was provided. Questions were raised by the committee about ethical issues related to email-based research, and clarification was sought from the applicant about the relationship between the researcher and the student-teacher participants. Answers to the questions raised were provided, and these were approved by the committee, as shown in the appendices (see Appendix A and B).

5.1.5 Rationale for the use of written questionnaires

Because the research literature in the area of teacher education is predominantly based on the questionnaire format (Chaplain, 2008), this present study also adopted the same strategy. In addition to incorporating standardised scales, as described later in the chapter (see section 5.4), into a questionnaire format, additional items were adopted from similar studies (Bakker, Van der Zee, Lewig, & Dollard, 2006; Chan, 2002), and others were written to more closely address the research questions. Existing scales and additional questions incorporated into new scales for this study were separated into sections to match the research questions. These are described in greater detail under
Measures (see Chapter 5.4).

5.1.5.1 *Pre-testing*

The validated scales incorporated into the well-being questionnaires were chosen to elicit standardised responses. Open-ended questions and space was provided to probe for further understanding of the responses to the questions. Before writing additional items for the pilot-questionnaire, a number of studies that considered prevalence of psychological distress were reviewed (Bultmann et al., 2005; Dammeyer & Nunez, 1999; Dutta et al., 2005; Helmers et al., 1997; Humphris et al., 2002; Inam et al., 2003; Khan et al., 2006; Kogan et al., 2005; Marcotte et al., 1999; Muirhead & Locker, 2007; Stallman, 2008; Vaidya & Mulgaonkar, 2007; Van Yperen & Hagedoorn, 2008; Wong et al., 2006). Predictions associated with personality were also considered (Jiang et al., 2003; Jorm et al., 2000; Matsudaira & Kitamura, 2006; Pritchard et al., 2007). Also considered were studies of distress and personal demands among university students, and where possible, among teachers and/or student-teachers (Ross et al., 2006; Schreier & Abramovitch, 1996; Shaikh & Deschamps, 2006; Williams et al., 2005), and professional demands (Crandall & Perrewé, 1995; Griva & Joekes, 2003; Kokkinos, 2007; Kyriacou, 2001; Montgomery & Rupp, 2005; Tuettemann & Punch, 1992; Zimmermann et al., 2008).

Prior to creating the questionnaires, coping studies, particularly among teachers and/or student-teachers were reviewed (Chaplain, 2008; Herbster, 1988; Lazarus, 1993; Murray-Harvey et al., 2000; Parker & Martin, 2009; Pearlin & Schooler, 1978; Stevens et al., 2007; Sumson & Thomas, 1999; Wilhelm et al., 2000). Standardised measures for coping, based on cognitive behaviour therapy (CBT), were used in many of those studies (Christensen et al., 2002; Parslow et al., 2006; Scott et al., 2000; van den Berg et al., 2004; Williams, 2001). Mindfulness, a contemporary coping strategy, was also
explored (Davidson et al., 2003; Miller et al., 1995; Rosenzweig et al., 2003; Shapiro et al., 1998).

A pilot well-being questionnaire was constructed to measure psychological distress, personality and mastery characteristics, personal and professional (Internship) demands and coping strategies, resources and barriers to help-seeking. The items selected for inclusion in the questionnaire were reviewed by experienced colleagues (Supervisors). Modifications were made to content and structure, according to their advice. A pre-test of the pilot well-being questionnaire was undertaken with a selection of representatives from the student-teacher population prior to the official beginning of the 2009 academic year (see Table 5.2 below). Following their suggestions and comments, particularly about the re-wording and re-designing the format of the demographic items in “Section B: About You” (see Appendix C), the content and design were further modified and developed (see Research Stages 5.6.1: Pre-test: Semester 1). Once modifications were completed, three versions of the paper well-being questionnaires were printed. These were colour-coded to avoid confusion when collating results, as shown in Table 5.2.
### Table 5.2 Academic Calendar and Timing of Data Collection

<table>
<thead>
<tr>
<th>Academic Calendar 2009</th>
<th>Time 1</th>
<th>Measure</th>
<th>Method</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation week</td>
<td>February</td>
<td>Pre-Test</td>
<td>Questionnaire 1 Quantitative and Qualitative data</td>
<td>Posted to various student-teachers’ addresses</td>
</tr>
<tr>
<td>Semester One Week three,</td>
<td>Time 1 (T1) 16th March</td>
<td>Baseline Data</td>
<td>Questionnaire 1 (green) Quantitative data</td>
<td>On campus at a lecture and at tutorials</td>
</tr>
<tr>
<td>Mid semester student vacation</td>
<td>Time 2 (T2) 15th July</td>
<td>Pre-Internship</td>
<td>Questionnaire 2 (pink) Quantitative data</td>
<td>On campus at lecture during Capstone program</td>
</tr>
<tr>
<td>Semester Two Week three,</td>
<td>Time 3 (T3) 11-14 August</td>
<td>Mid-Internship</td>
<td>Data provided through Cluster meetings Qualitative data</td>
<td>Four primary schools</td>
</tr>
<tr>
<td>Semester Two Week six,</td>
<td>Time 4 (T4) 28th August</td>
<td>Post-Internship</td>
<td>Questionnaire 3 (yellow) Quantitative data</td>
<td>Disseminated at student-teachers’ Cluster Group meetings for return to the university</td>
</tr>
</tbody>
</table>

The study, conducted with a convenience sample of student-teachers at an education faculty of a medium-sized state university in south-east Queensland, is further discussed in Chapter 5.3 Sample. To meet the criteria for inclusion in the study, student-teachers had to be in their final year of a four year undergraduate Bachelor of Primary Education degree. As final year undergraduate university students, the student-teachers were considered to have cognitive capabilities to provide accurate data.

5.1.5.2 **Time 1 (T1)**

When data were first collected, at Time 1 (T1), on 16th March, 2009 (see chapter 5.6: Research Stages), student-teachers were in week three of their fourth, and final year, of their undergraduate Bachelor of Education degree in Primary School Education. In the early weeks of the academic year, there were no imminent exam
preparations, and their Internship was more than four months ahead. The researcher predicted that student-teachers’ stress levels would be lower at this time rather than later in the year, and they would be willing to respond to a paper questionnaire disseminated during a lecture.

5.1.5.3 Time 2 (T2)

All fourth year student-teachers were expected to be on campus for an intensive two-week period of training known as the Capstone program, conducted immediately prior to their Internship. The second round of data collection was scheduled to occur at Time 2 (T2), at the conclusion of the Capstone program. It was considered that the student-teachers’ stress about their forthcoming Internship would be considerable at this time, as it was the week immediately before they were to go into schools for their Internship. The Capstone program co-ordinator agreed to provide time in the program for the researcher to discuss this research project, and for student-teachers to complete a second paper questionnaire during the final week of the program.

5.1.5.4 Time 3 (T3)

Because student-teachers’ performance was to be assessed halfway through their Internship, the plan was initially to send them a third questionnaire by email. This questionnaire would be completed mid-way through the expected 10-week Internship by those student-teachers who had provided their permission at Time 1 for questionnaires to be sent to them through a faculty administrator (thereby maintaining anonymity). However, subsequent faculty decisions revealed during the latter half of first semester indicated that the Internship was to be cut back from ten weeks to only six weeks. Due to this shorter time frame, plans for sending a third email questionnaire were aborted.
The new Internship structure required student-teachers to attend primary schools for only 30 teaching days. In addition, 13 student-teachers had been given permission to complete their Internships in rural Queensland and Victoria, and overseas in locations including Bali, Vietnam, Canada, France, UK, USA, and Canada. The first 15 days representing the first half of their Internship, are referred to as Stage 1. During that time student-teachers had been observed by their Mentor Teacher when teaching children in primary school classrooms. A professional team, using the Queensland College of Teachers’ Professional Standards, comprising the School Coordinator, the Mentor Teacher, and where necessary, the University Internship Convenor then met at the conclusion of Stage 1 to reflect on the progress of each locally-based student-teacher. That team assessed whether or not the student-teachers were operating at standard, above standard, or below standard. For those overseas or interstate, the School Coordinator and Mentor Teacher held meetings with the University Internship Convenor using Skype telephone connections.

Following student-teachers’ Stage 1 assessment, the University Internship Convenor scheduled Cluster Group meetings with student-teachers at four different state government host primary schools in the region. The researcher also attended these meetings, for the purpose of obtaining qualitative data about student-teachers’ experiences in the field. The qualitative data from these meetings was the Time 3 data.

5.1.5.5 Time 4 (T4)

The second half of the Internship was referred to as Stage 2. During this stage of their Internship, student-teachers had responsibility for preparation and teaching classes of school students. During this stage, they were expected to maintain and improve the standard achieved in the first stage of their Internship. A final evaluation, including a rating, was required by the Queensland College of Teachers, as this forms part of the
process of gaining future employment as a teacher. Thus, it was expected that the stresses associated with their Internship would be most strongly felt by the end of the Internship, and this could be captured by the final questionnaire.

The third colour-coded paper questionnaires were disseminated at cluster group meetings. They were enveloped by a band, and contained instructions that student-teachers were not to open or complete the questionnaires until their Internship was over. On the last day of the Internship, student-teachers were required by the University, to physically submit their final Practice Teaching Report by placing it in a box provided by the University Internship Convenor, together with a statement of satisfactory completion of their Internship. This completed their academic assessment. They were also instructed by the researcher to return the final questionnaires, disseminated at cluster meetings, in that same box.

Since 13 student-teachers had gained placements in rural/remote or international schools, Questionnaire 3 was posted to them nationally or to their overseas addresses, together with reply paid envelopes. Because new demand and coping variables, such as different student behaviour due to cultural issues, or more stress due to reduced support systems, could be introduced at these various locations, the results could not be used in quantitative analyses. Nevertheless, these student-teachers’ comments were accepted for potential inclusion in qualitative analyses.

5.2 Setting

Data were collected at several locations. The first and second round of quantitative data collection occurred at lectures in an education faculty of a medium-sized state university in south-east Queensland. The third collection involved qualitative data, obtained in the field from four Cluster Groups at meetings held at four state-owned host primary schools located in the Gold Coast. The third and final questionnaires were
disseminated to student-teachers in their Cluster Groups, together with instructions about returning the questionnaires post Internship to a box on campus, pre-arranged for final data collection.

5.3 Sample

5.3.1 Recruitment of student-teachers into the research project

In selecting a cohesive group, who had an established peer support network developed over the four years of their undergraduate degree, it was anticipated that, whilst there may be institutional effects, the impact of other confounding factors, such as location, school culture, academic and school personnel, and processes such as timing or length of Internship experience, could be minimised. Some student-teachers were to undertake their Internship away from the Gold Coast at rural/remote or international settings, and this was initially unknown to this researcher.

5.3.2 Sample size considered

Sampling obtained using questionnaires can be used to reliably draw inferences about a population (Yu & Cooper, 1983). Similar studies were considered when determining the sample size needed for this research project. In order to test the hypotheses, a 2-tailed test of significance, with an alpha level of .05 was preselected, based on a study in which the DASS was used to establish levels of psychological distress in a university student cohort (Vaidya & Mulgaonkar, 2007).

5.3.2.1 Sample size for a contemporary prevalence study

Vaidya and Mulgaonkar (2007) used the Depression, Anxiety and Stress Scale (DASS) in a prevalence study of psychological distress among university students. In that study, there were 109 Indian medical students. Those authors correlated the psychological distress data with students’ academic performance. Their study of prevalence, together with the instructions from the DASS test developers (Lovibond &
Lovibond, 1995), as described below, indicated the acceptability of this sample size. Thus, a sample of around 109 student-teacher participants was considered appropriate for obtaining a statistically significant result in this study.

5.3.2.2 Sample size for the Depression, Anxiety and Stress Scale

Lovibond and Lovibond (1995) recommended that the sample size needed when using the DASS should be five times the number of variables to be examined. The full scale of the DASS has 42 items, or variables, but a shorter 21-items scale is also available. The full 42-item DASS contains 14 items in each of the Depression, Anxiety and Stress sub-scales, whereas the DASS21 contains 7 items in each of the Depression, Anxiety and Stress sub-scales.

5.3.2.3 Sample size for this study of student-teachers

Based on Vaidya and Mulgaonkar’s (2007) study, a similar sample size of student-teachers was sought. There were 145 final year primary school student-teachers enrolled in the 4-year Bachelor of Education degree at the beginning of 2009. The research project would be introduced to the entire cohort of students in the education faculty on one university campus, as described in Chapter 5.2 above; therefore these numbers were considered to be appropriate and feasible.

Student-teachers are required to attend lectures on campus, therefore it was anticipated that they would all attend lectures in first semester, during which the project would be introduced. It was assumed that 90% of these student-teachers would participate, which would represent a sample size of about 130 student-teachers.

5.3.3 Attrition

There were 15 student-teachers who had withdrawn from the course by the time the second questionnaire (Q2) was disseminated. This left 130 student-teachers enrolled (n = 130) in the Capstone program. By Q3, another 15 had departed. Thus, only 115 of
the original 145 student-teachers remained, and of these, 13 had been permitted to complete their Internships interstate or internationally.

Table 5.3 Course Attrition and Student-Teachers’ Response Rates

<table>
<thead>
<tr>
<th>Time</th>
<th>Number of student-teachers enrolled</th>
<th>Questionnaire or cluster meeting</th>
<th>Number of student-teachers who participated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 (baseline)</td>
<td>145</td>
<td>Q1</td>
<td>105 (72.4%)</td>
</tr>
<tr>
<td>Time 2 (pre Internship)</td>
<td>130 (10% left)</td>
<td>Q2</td>
<td>96 (73.8%)</td>
</tr>
<tr>
<td>Time 3 (mid Internship)</td>
<td>130</td>
<td>Cluster meetings (4)</td>
<td>112 attended</td>
</tr>
<tr>
<td>Time 4 (post Internship)</td>
<td>102 (20% left)*</td>
<td>Q3</td>
<td>39 (38%)</td>
</tr>
</tbody>
</table>

* At Time 4 (post Internship), 13 student-teachers interstate or overseas

As shown in Table 5.3, there were 105 student-teachers who returned the baseline questionnaire (Q1). This represented 72.4% of the student-teachers available at Time 1 (T1). There was a 20% rate of attrition of primary school student-teachers across the time span of this four-part study, from baseline at the beginning of the year, to post Internship.

By assessing only the student teachers who were still enrolled when data were collected, the results indicate a slight increase in percentage of student-teachers who participated in this project between Time 1 (baseline data), when the baseline data was established (72.4%) and Time 2, or pre Internship (73.8%). However, post Internship percentages reveal a significant decrease in participation, with only 38% of eligible student-teachers returning the questionnaire (Q3). Whilst ineligible, spontaneous responses from the 13 student-teachers in rural and remote locations could have potentially added an additional dimension to the qualitative data. However, none of those student-teachers returned Q3.

5.4 Measures

In this multi-stage study, three questionnaires were used to investigate seven independent variables, Depression, Anxiety, Stress, Personality, Mastery, Coping and
alcohol use. The scales used measure those variables, and construct the questionnaires for this study, are freely available on the internet. The manual for interpretation of the Depression, Anxiety and Stress Scale DASS scores was used (Lovibond & Lovibond, 1995).

Psychological distress was measured using DASS, personality characteristics were measured using the Ten Item Personality Inventory (TIPI) (Gosling, Rentfrow, & Swann, 2003), mastery was measured using the Pearlin-Schooler Mastery Scale (PSMS) (Pearlin & Schooler, 1978) and coping strategies were measured using inventories including the Brief COPE (Carver, Scheier & Weintraub, 1989) and Alcohol Use Disorders Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders & Monteiro, 2001).

Once developed, the items in Questionnaire 1 were pre-tested. Items considered relevant to demonstrate psychological distress, demographic features, personal demands, personality and mastery, coping and the professional demands of the Internship were then included into three questionnaires (Q1, Q2 and Q3). Where established scales were used, items were ordered as required, but where scales were created, no particular order was followed for the arrangement of items in the non-standardised instruments.

5.4.1 Standardised quantitative instruments (DASS21, TIPI, PSMS, Brief COPE and AUDIT)

This section contains a review of the published scales used to measure the prevalence of psychological distress with university-student populations, personality, mastery, and coping. This is followed by a description of the items developed for inclusion in the questionnaires, including personal and professional demands, and barriers to help-seeking.

The three questionnaires (Q1, Q2 and Q3) comprised five sections, as follows;
- Section A: Your Levels of Stress (21 items from the DASS to measure Psychological Distress)
- Section B: About You (12 items to measure Personal Demands/Demographic Data)
- Section C: Your Personality (6 items from the TIPI, and 7 items from the PSMS)
- Section D: Your Stress Management and Well-Being (22 items based on CBT, Mindfulness, AUDIT, and strategies from the Brief COPE)
- Section E: Your Internship (12 items based on the Survey of Practicum Stresses)
- Section F: Your Resources for Well-being during the Internship (10 items professional/other)

Open-ended questions and provision for additional comments in response to several items, analysed as qualitative data, were included in Questionnaire 1 (see Appendix A). Demographic data, personal demands items, personality and mastery, were considered to be relatively stable over time, and were therefore excluded from subsequent questionnaires.

The second questionnaire (Q2) consisted of the same sections as used in Q1 (Section A – F) and included open-ended questions and provision for additional comments (see Appendix B). The third questionnaire (Q3) replicated Q2, with the addition of page 6, a request for elaboration on the effectiveness of stress management experiences during the Internship (see Appendix C). Each questionnaire was colour coded for ease of administration.

5.4.1.1 **Rationale for the use of the Depression, Anxiety and Stress Scale (DASS21)**

The Depression, Anxiety and Stress Scale (DASS) was selected as it is freely available to researchers from the web, and it assesses a variety of human factors including situational anxiety, difficulty relaxing, and chronic non-specific arousal. This
test is used by Australian psychologists and General Practitioners to assess levels of psychological distress, specifically testing Depression, Anxiety and Stress, among the general population. The alpha reliability values given for the 7-scale items of the DASS 21 for Depression, Anxiety and Stress respectively are 0.81, 0.73 and 0.81 (Lovibond & Lovibond, 1995).

The full version of the DASS contains 42 items. In the DASS21, the number of items included is halved. It contains seven items for each sub-scale condition (Depression, Anxiety and Stress). In this study, the emphasis is on changes in conditions, measured by the seven items used to score each of the three sub-scales, thus the DASS21 was included in each questionnaire (Q1, Q2 and Q3) to measure student-teachers’ psychological distress.

Scores derived from the DASS are numerical. The instructions for the DASS suggest that it may be administered to non-clinical samples, in groups, and across a variety of settings where the requirement is to measure changes over time on the three dimensions of depression, anxiety and stress (Lovibond & Lovibond, 1995). Thus the instrument suits the broad research question and the seven specific research questions addressed in this thesis.

The DASS 21 was chosen rather than the longer DASS42, because, when it was disseminated during lectures, there were time constraints. It was also selected due to budget constraints, availability, the size of the sample, its reliability and validity, and degree of representativeness of the student-teacher population and university students’ capabilities to provide accurate data.

This application was supported in a study where the DASS had been used effectively alongside another established instrument, the Hospital Anxiety and Depression scale (HADS), to measure anxiety and depression in hospital patients.
Results from that study confirmed the high internal consistency for each subscale of the DASS21.

To complete the DASS21 questionnaire, student-teachers were required to circle a number, as it applied to them, in response to each question about the extent to which they had identified with the experiences provided, during the past week. For example, in response to “I tended to over-react to situations”, they were required to provide a response based on a 4-point rating scale, between 1 (Strongly Disagree) and 4 (Strongly Agree).

None of the items refer to suicidal tendencies because the test developers had stated that “items relating to such tendencies were found not to load on any scale” (p.5). The student-teachers’ responses were used to provide prevalence of psychological distress at baseline (Time 1), and immediately prior to (Time 2), and following (Time 3), the Internship. See Chapter 6 Results for confirmation of the high internal consistency of each of the three DASS 21 subscales.

5.4.1.2 Rationale for the use of Ten Item Personality Inventory (TIPI)

A Ten Item Personality Inventory (TIPI), used to measure the main personality domains commonly accepted in distress research, was developed for research when time is limited (Gosling et al., 2003). The TIPI, a hierarchical model of personality traits, consists of only 5 pairs of items. Thus, it was considered to be the least demanding on student-teachers who may be otherwise burdened by personal and professional demands.

The five broad factors of the TIPI measure 1) Extroversion (which includes being sociable, assertive, talkative and active not reserved or shy), 2) Emotional Stability (which includes being relaxed, self-confident and not anxious, moody or easily stressed), 3) Conscientiousness (which includes being organised, hard working, responsible and self-disciplined not careless or impulsive), 4) Agreeableness (which
includes trust, generosity, sympathy and co-operation not aggression), and 5) Open to Experience (which includes creativity and being unconventional). Gosling et al., (2003) psychometrically validated and reported the reliability of the TIPI items. Those Cronbach alpha reliability scores for Extroversion, Conscientiousness, Emotional Stability, Openness to Experience and Agreeableness were .68, .40, .50, .73, .45 and .40 respectively.

Only three personality characteristics, Extroversion, Conscientiousness, and Emotional Stability, were used in the questionnaires in this research. The baseline questionnaire (Q1) incorporated two paired items for each variable, thus six items were included from the TIPI. Responses were made using a 7-point rating scale, which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). Scoring instructions were downloaded from the freely available internet materials. The specified recoding of reverse-scored items was undertaken. A total score for each trait was calculated by adding the responses to the TIPI paired statements.

5.4.1.3 Rationale for the use of the Pearlin-Schooler Mastery Scale (PSMS)

The impact of life events on an individual’s mental health can be addressed through understanding mastery (Pearlin, Menaghan, Morton, & Mullan, 1981). The 7-item PSMS scale was designed to measure the extent to which people feel able to control their lives (Pearlin, & Schooler, 1978). It was included to assess the extent to which student-teachers felt themselves to be in charge of events in their lives, particularly during their Internship. The scale required student-teachers to indicate their level of agreement according to a 4-point rating scale from 1 (Strongly Disagree) to 4 (Strongly Agree). Basic psychometric properties have been established for the PSMS, as shown in a study exploring the predictive power of optimism and mastery with respect to depression, in which Cronbach’s alpha was .75 (Scheier, Carver, & Bridges, 1994).
Prior research into teacher stress, and scales for measuring the impact of the Internship on the levels of psychological distress experienced by student-teachers (A Plus Project Manual, 2002; Andersson et al., 2005; Baillie & Rapee, 2004; Chan, 2002; Chaplain, 2008; D'Rozario & Wong, 1996; Dyson, 2005; Easthope & Easthope, 2007; Fletcher & Hayes, 2005; Guglielmi & Tatrow, 1998; Hayes, 2004; Herbster, 1988; Kyriacou, 2001; McCarthy et al., 2009; McEvoy & Nathan, 2007; Murray-Harvey, 1999; Parker & Fletcher, 2007; Pillay et al., 2005; Sumsion & Thomas, 1999; Wilhelm et al., 2000), were then assessed. The literature and strategies outlined were used to construct new scales to measure features of student-teachers’ personal and professional coping strategies and resources they used. This resulted in scales comprising 12 professional demand items, 22 personal coping items, and 10 professional support resources, and barrier items. These are now presented in more detail.

5.4.1.4 Rationale for the use of Brief COPE

Whilst published scales have been used to measure coping strategies among teacher populations (Montgomery & Rupp, 2005), they have not been used with primary school student-teachers. A new scale developed for this study to measure coping strategies among student-teachers, the Personal Strategies and Resources Scale (PSRS), included items from the Brief COPE (Carver, 1997), an abbreviated form of the COPE inventory (see 5.4.2.3).

The COPE inventory, developed to assess ways in which people respond to stressful events in their lives (Carver et al., 1989), comprises 14 conceptually different scales. Each scale has a specific focus on aspects of coping, and measures ways people usually cope when under stress. In the COPE, a broad range of coping responses are measured using two pairs of opposite tendencies. The COPE supports the assumption that people deal with stress in a wide variety of different ways.
The original COPE did not have a measure of self-blame. However, because this item has subsequently been found to predict poor adjustment under stress (Carver, 1997), it was included in the new scale for this thesis. Brief COPE items were included in the revised scale to measure denial, avoidance, and behavioural disengagement, and other negative strategies including behavioural disengagement, denial and helplessness and alcohol use.

Psychometric properties of the Brief COPE, derived from Carver’s (1997) research with a sample of adults, and detail of the items selected for inclusion in a Personal Coping Scale included in the questionnaires, are presented in Table 5.4.

<table>
<thead>
<tr>
<th>Brief COPE</th>
<th>α reliability</th>
<th>Items as written for inclusion in the PCS scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Coping</td>
<td>.68</td>
<td>I do something about the situation I am in.</td>
</tr>
<tr>
<td>Planning</td>
<td>.73</td>
<td>I work out a strategy to decrease my stress.</td>
</tr>
<tr>
<td>Positive Reframing</td>
<td>.64</td>
<td>I look for something good in what is happening I tell myself to look at the situation differently.</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.57</td>
<td>I learn to live with it.</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>.71</td>
<td>I get comfort and understanding from my family.</td>
</tr>
<tr>
<td>Instrumental Support</td>
<td>.64</td>
<td>I talk about my worries to my friends.</td>
</tr>
<tr>
<td>Self-Distraction</td>
<td>.71</td>
<td>I do something to think about it less.</td>
</tr>
<tr>
<td>Denial</td>
<td>.54</td>
<td>I pretend it has not really happened.</td>
</tr>
<tr>
<td>Venting</td>
<td>.50</td>
<td>I get upset and let my emotions out.</td>
</tr>
<tr>
<td>Disengagement</td>
<td>.65</td>
<td>I give up trying to deal with it.</td>
</tr>
<tr>
<td>Self-Blame</td>
<td>.69</td>
<td>I criticize myself.</td>
</tr>
</tbody>
</table>

Following advice provided by respondents to the pre-testing, three paired items (Religion, Humour and Substance Use) were excluded from the PCS. Instead, two items from The World Health Organisation’s Alcohol Use Disorders Identification Test
(AUDIT), a simple assessment screening device designed to measure alcohol use in combination with other questions as part of a lifestyle questionnaire, were included.

The AUDIT measures only alcohol use, not drug use, thus it aligns more closely with this research of psychological distress and coping strategies for student-teachers’ well-being than the items from the Brief COPE. AUDIT questions explore risks associated with high-level drinking each day, or dependence on alcohol, which contributes to cognitive, behavioural, and physiological phenomena in greater depth.

The AUDIT provides a standardised measure of risk across gender and age, compares equally well with other screening tests, has previous test-retest reliability r = .86, and the recommended cut off co-efficient alphas are typically around 0.8 (Creswell, 2007). The two AUDIT items selected to emphasize identification of hazardous drinking rather than long-term dependence, and to focus primarily on recent symptoms, were 1) I often have 6 or more alcoholic drinks on one occasion, and 2) I drink more than 2 glasses of alcohol daily to help me get through.

5.4.2 Non-standardised quantitative measures created for this study

Questionnaire 1 contained eight personal demand items, 22 coping items (mostly from the Brief COPE, as discussed above, 12 professional demand items and 10 items (incorporating four barrier items) developed and included into new scales, based on factors identified from the literature. These are discussed below.

5.4.2.1 Student-teacher demographics and personal demands

In the baseline questionnaire (Time 1), items to measure personal demands were included in Section B (“Section B: About You”). The student-teacher demographic information and personal demands section was based on studies of personal demands in the lives of other university students (Dyrbye et al., 2006; Humphris et al., 2002).
In this “About You” section, fees, paid employment details and personal and familial responsibilities were requested, through completion of both quantitative and qualitative data. Four items measured domestic responsibilities, namely a) living arrangements b) family responsibilities; c) payment of university fees; and d) paid employment.

5.4.2.2 *Personal Coping Scale (PCS)*

In developing scales to measure coping, Brief COPE and AUDIT items were included, but in some instances the wording was reduced, to sharpen the focus, as described above (5.4.1.4). Several measures of coping aligned to other strategies that have been used effectively, and typically assess coping responses as adaptive and maladaptive (Folkman & Moskowitz, 2004). The new scale, the Personal Coping Scale (PCS), consisted of 22 coping items, and there was an overlap with self-help strategies, cognitive strategies and problem solving techniques from cognitive behaviour therapy CBT (Beck, 2005), and mindfulness (Brown et al., 2007).

To measure ways in which contemporary student-teachers personally respond to potentially stressful events in their lives, contemporary coping strategies were measured on a scale developed from a combination of coping measures. The questions developed were based on psycho-educational, cognitive behavioural processes (Parslow et al., 2006; Treatment Protocol Project, 2004), mindfulness (Harris, 2006), exercise (Lawlor & Hopker, 2001), self-help materials and web-based resources (Christensen et al., 2002; Jorm, Christensen, & Griffiths, 2005).

Contemporary strategies known to be efficacious in the management of depression, anxiety and/or stress include reference to psycho-education (A Plus Project Manual, 2002), cognitive behaviour (Scott et al., 2000) and mindfulness strategies, as well as social support (Herrington, Herrington, Lockyer, & Brown), self-help web-
based materials (Andersson et al., 2005), and exercise (Mead et al., 2009). An example of a psycho-educational cognitive and behavioural item is “I practise positive self-talk”, and an example of an item assessing mindfulness strategies, accepted as positive psychotherapy for psychological conditions (Petchkovsky, 2009), is “I remind myself to focus on the present”. Other items used to assess use of self-help techniques included “I focus on my breathing and relax”. Questions about using relaxation, yoga, books and other media including web-sites for management of distress were also included.

5.4.2.3 Professional Demands Scale (PDS)

This scale, consisting of 12 independent modifiable variables was developed to measure the student-teachers’ experiences of the Internship. These 12 professional, or Internship, demand items were based on a teacher coping scale, the Survey of Practicum Stresses (SPS), developed by D’Rozario and Wong (1996). In their survey of practicum stressors, qualitative analyses was reported, revealing that 11 of these items were considered stressful by first year student-teachers in Singapore (Murray-Harvey, 1999).

Existing scales which measure phenomena related to the professional demands of teaching (D’Rozario & Wong, 1996) were adapted to measure demands associated with the primary school teaching Internship. As student-teachers in this study were also subjected at their Internship to time constraints, feedback, evaluation, managing student behaviour and teaching workload, five of the items identified by D’Rozario and Wong (1996) were included in the Professional Demands Scale (PDS) developed for this study. These items were:

1. Managing the demands of teaching within the time available
2. Receiving negative feedback from the classroom teacher
3. Managing the overall teaching workload
4. Managing the students’ behaviour
5. Being evaluated by the classroom teacher.

Additional items were created in the PDS to measure the way contemporary student-teachers balance their professional and personal commitments and their high personal expectations of their teaching performance. Following pre-testing, other items were developed to ascertain if there were barriers that may preclude student-teachers from letting others know if they were distressed by the Internship, to explore their preparedness, if asked, to teach outside their scope of expertise, to determine how competent they felt with using technology, and to focus on their aspirations. The seven additional professional demand items were thus:

1. Preparedness to teach outside area of expertise
2. Being challenged by having to learn new aspects of the curriculum
3. Maintaining a balance between professional and personal commitments
4. Internship stress
5. Not seeking support, due to fear that it may harm teaching career prospects
6. Feeling competent with the technology
7. Aspirations to achieve the highest possible Internship rating

All 12 professional demand items in the new PDS scale were presented with a 7-point rating scale, which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). A high total score on any one item e.g. “I will find it difficult to manage the workload” indicated a high level of perceived stress associated with the professional demands of the Internship, whereas a low score indicated a low level of perceived stress associated with the professional demands of the Internship.

5.4.2.4 Professional Resources Scale (PRS)

In keeping with the theoretical framework developed for this study, university and other primary health care professional resources were examined through the
development of a 10-item Professional Resources Scale (PRS). Since the Australian Government enables patients to receive a rebate of Medicare items, if referred by their GP for psychological help with mental health issues (Department of Health and Ageing, 2008), an item was included to explore student-teachers’ use of this process. Other resources referred to support from the University Internship Co-ordinator, and peers. The items to identify primary health care and university resources used for coping by student-teachers were divided into three variables: primary care support, supervisory and support from peers.

Evidence suggests that poor sleeping habits are associated with psychological distress (Christensen et al., 1999), and, in particular, depression is nearly always associated with poor sleeping behaviours (Treatment Protocol Project, 2004). The questionnaires thus included a single item, requesting student-teachers to indicate their agreement or disagreement with a statement about their sleeping habits.

Barriers to university students’ seeking help have been described earlier in Chapter 3. To discern any responses such as stigma, which may preclude student-teachers from seeking help, four items were developed to reflect this aspect of coping behaviour. For example, a barrier item was “I don’t do any of the above because I don’t think they would help”. PRS responses were made using a 7-point rating scale, which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) and an open-ended question was included to elicit other resources that may be, or were, used.

5.4.3 Structure of the final questionnaires

The first requirement in each of the questionnaires was for student-teachers to complete personal pin or identification code, so that responses could be cross-matched between Questionnaires 1, 2 and 3. In the first section of each of the three questionnaires, Section A included questions to measure the prevalence of
psychological distress, taken from the DASS 21. In the initial questionnaire (Q1),
demographic information was requested in Section B. Questionnaires were divided into
sections. In order to provide confidentiality, and to provide an identifier, a special code
was developed by each student-teacher. This unique code, as shown in Attachment,
preceded the first section, “Section A”, in each questionnaire.

Personal responsibilities, together with other non-focal personal demand
measures, were incorporated into “Section B: About You”. Personality and Mastery
were explored using the TIPIU and PSMS items in “Section C: Your Personality This
Personal Coping and Resources Scale (PCRS)” and coping strategies were explored in
“Section D: Your Stress Management and Well-Being”. A Professional Demands Scale
(PDS) was presented in “Section E: Your Internship” and the resources used by
contemporary student-teacher to respond to their Internship, and any barriers to support
were assessed in “Section F: Your Resources for Well-Being During the Internship”.

5.4.3.1 *Baseline questionnaire (Q1) completed at Time 1*

Student-teacher demographic features and personal demands were measured
using Questionnaire 1 (Q1). The demographic variables were gender (male or female),
age (in years), educational attainment (divided into; a) highest level of education prior
to B.Ed; b) grade point average (GPA) in the previous academic year; c) country of
previous secondary education; and d) result in year 12/final year at school), and marital
status. Demographic features and Personal Demand items were included in Q1 only,
with the exception of age and gender. These two questions were repeated, in case there
were a need to match Q1 to either of the subsequent questionnaires because the code
had been overlooked by student-teachers.
The baseline questionnaire (Q1) completed at Time 1, was eight pages in length (see Appendix A), and took most student-teachers approximately 20 minutes to complete. It was divided into six sections (A – F) as shown in Table 5.5.

**Table 5.5 Summary and comparison of the scales and measures in the three written questionnaires delivered at Times 1, 2 and 4**

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Time</th>
<th>Section</th>
<th>Number of Items</th>
<th>Name of Scale</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1, Q2, Q3</td>
<td>Baseline, pre Internship post Internship</td>
<td>A</td>
<td>21 items</td>
<td>Depression, Anxiety and Stress Scale (DASS21)</td>
<td>Psychological distress</td>
</tr>
<tr>
<td>Q1 only</td>
<td>Time 1 Baseline only</td>
<td>B</td>
<td>14 items</td>
<td>Non scale measurement: Student-Teacher Demographic Information and Personal Demands</td>
<td>Demographic features Personal Demands</td>
</tr>
<tr>
<td>Q1 only</td>
<td>Time 1 Baseline only</td>
<td>C</td>
<td>6 items</td>
<td>Ten Item Personality Inventory (TIPi)(extroversion, neuroticism and conscientiousness)</td>
<td>Personality characteristics</td>
</tr>
<tr>
<td>Q1 only</td>
<td>Time 1 Baseline only</td>
<td>C</td>
<td>7 items</td>
<td>Pearlin-Schooler Mastery Scale (PSMS)</td>
<td>Mastery</td>
</tr>
<tr>
<td>Q1, Q2, Q3</td>
<td>Baseline Pre Internship post Internship</td>
<td>D</td>
<td>22 items</td>
<td>Personal Coping and Resources Scale (PSRS), incorporating 12 Brief COPE times, 2 AUDIT items, 2 mindfulness items, 1 exercise item and self-help and CBT items</td>
<td>Personal Coping Strategies</td>
</tr>
<tr>
<td>Q1, Q2, Q3</td>
<td>Baseline, pre Internship post Internship</td>
<td>E</td>
<td>10 items</td>
<td>Professional Demands Scale (PDS)</td>
<td>Internship demands</td>
</tr>
<tr>
<td>Q1, Q2, Q3</td>
<td>Baseline, pre Internship post Internship</td>
<td>F</td>
<td>10 items</td>
<td>Professional Resources Scale (PRS)</td>
<td>Professional resources, sleep and barriers to seeking support</td>
</tr>
</tbody>
</table>

In Table 5.5, items from both standardised (DASS, TIPi, PSMS, Brief COPE and AUDIT) and non-standardised measures (PCS, PDS and PRS) were incorporated into three written questionnaires (Q1, Q2 and Q3).

5.4.3.2 **Pre Internship questionnaire (Q2) completed at Time 2**

This five-page questionnaire was structured identically to Q1 so that the results could be compared; however, Section B (demographic features and personal demands) and Section C were omitted after the original data had been obtained, as these features were unlikely to change. Q2 contained the sections with items to measure prevalence of
psychological distress, professional demands, and personal and professional coping strategies and resources, and barriers to help-seeking. A final brief section, asking gender and age was included in case coding was confused, and matching became difficult.

5.4.3.3 Post Internship questionnaire (Q3) completed at Time 4

The scales used in this six-page questionnaire were identical to Q2. An additional final page was included to obtain quantitative data. This provided student-teachers with the opportunity to elaborate on any of their answers or to comment generally about the Internship experience. Student-teachers were invited to write any other comments that could shed light on their experiences, their stress management strategies and the effectiveness or use of any particular strategies with regard to their Internship.

5.4.4 Qualitative measures

The three written questionnaires incorporated open-ended questions at the end of each section. Thus student-teachers could expand on their responses to the measures.

5.4.4.1 Open-ended questions in Q1, Q2 and Q3

Student-teachers’ responses to the open-ended questions were transcribed by the researcher. The data were then analysed thematically. The outcome is reported as Qualitative Results in Chapter 7. The number of respondents to each questionnaire was provided. Responses to open-ended questions were content analysed by the researcher, and representative comments within each of the themes is presented to add richness to the quantitative findings.
5.4.4.2 *Cluster Group meetings with student-teachers at Time 3*

Between Time 2 (pre Internship) and Time 4 (post Internship), mid-way through the Internship (at about Week Three, Semester Two) at schools in a Queensland urban area, Interns (student-teachers) were assessed by their School Mentors. These Mentors are teachers who then met with the University Internship Convenor, to discuss each student-teachers’ progress. Then the University Internship Convenor, and this researcher, met with groups of student-teachers.

There were four Cluster Group meetings, each lasting for half a day, hosted at four primary schools. This researcher attended the first 90-minutes of these Cluster Group meetings. During this time, the student-teachers shared reflections on their progress with the University Internship Convenor, and this researcher. In the Cluster Group meetings, each student-teacher shared with the group two positive experiences related to the first half (Stage 1), or observational stage, of their Internship.

Having satisfactorily completed the three school weeks of Stage 1, student-teachers were expected to participate in team-teaching in the remaining three school weeks which comprised Stage 2. During the four meetings of Cluster Groups, each student-teacher shared one goal they had for Stage 2 (the remainder of their Internship). The researcher listened to their reflections and responses (see Results), accepted the University Internship Convenor’s invitation to briefly respond, and reminded the student-teachers of on-going stress management resources available to them through their GP and/or university health services, if required before the conclusion of the Internship.

The final questionnaire (Q3) was disseminated at the Cluster Group meetings. The researcher requested that it not be completed until the Internship was ended, and that it be handed in alongside their other forms being returned to their University...
Internship Convenor. To remind student-teachers not to complete Q3 early, a note was attached to each questionnaire, with directions that it not be opened until the completion of the Internship.

The researcher attended Focus Group meetings held in the field. The researcher recorded notes informally, without student-teachers’ names, or identifying their gender when writing up the comments after the meeting. Representative comments, obtained from the researcher’s informal notes, together with themes analysed from qualitative responses provided in the questionnaires, are reported in Results Chapter 7.

5.5 Data Collection and Management

5.5.1 Security and confidentiality

Questionnaires collected by the researcher were stored in a locked filing cabinet in the faculty’s research higher degree office. This office is only accessible to authorised personnel, who hold a swipe card.

5.5.2 Data collection issues

It was initially difficult to obtain support from University staff to disseminate the data collection instruments (Q1) to the required number of student-teachers, as approximately half the students were absent from the lecture where the baseline data was to be obtained. This was confirmed by the lecturer’s attendance sheet. Only 75/145 (52%) names were provided on the attendance sheet passed around by the lecturer.

In the initial planning of the project, the intention was to collect data by email during the Internship. When student-teachers who were followed up from Time 1 failed to respond by email, it became evident that this would be impractical. A second plan, based on past years when university supervisors visited Interns, was implemented. This involved the researcher obtaining a list of university supervisors, and approaching them with a request to take the questionnaires to the student-teachers (Interns). However, as
the semester progressed, the university revised this process. The new arrangement meant student-teachers met mid-Internship, at the end of Stage 1, in four Cluster Groups, attended by their peers and their University Internship Convenor. This researcher arranged to attend these Cluster Group meetings with the Convenor and student-teachers.

5.6 Research Stages and Time Frames for Data Collection

The sample was derived from a cohort of final year B. Ed student-teachers enrolled in a 4-year Bachelor of Education degree. Initially, the study design included data collection through administration of questionnaires at three separate time intervals (T1, T2 and T4). Originally, at T1, T2 and T4 written paper questionnaires were to be administered, with an email questionnaire to be disseminated during the Internship (T3), but this aspect of the design was changed. These changes, discussed below in 5.6.2, are reflected in Table 5.6, showing the research stages and time frame for data collection.

Table 5.6 Data Collection Schedule

<table>
<thead>
<tr>
<th>Data Collected</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test questionnaires (all questions and survey instruments as incorporated into Written Questionnaires (Q1, Q2 &amp; Q3)</td>
<td>2nd-28th February, 2009</td>
</tr>
<tr>
<td>Written Questionnaire 1</td>
<td>Completed 16th March, 2009</td>
</tr>
<tr>
<td>Written Questionnaire 2</td>
<td>Completed 15th July, 2009</td>
</tr>
<tr>
<td>Cluster Meeting responses</td>
<td>Conducted 30-31st July, 2009</td>
</tr>
<tr>
<td>Written Questionnaire 3</td>
<td>Disseminated 30 –31 July</td>
</tr>
<tr>
<td></td>
<td>Completed 31st August, 2009</td>
</tr>
</tbody>
</table>

5.6.1 Pre-test Semester 1

Pre-Testing of the questionnaire was conducted with eight students. Two were final year undergraduate student-teachers who could not be included in the cohort being studied, as they were completing their Internship out of sequence, due to a variety of
factors, and six were graduate students who had completed their Internship in the previous year. Their feedback was used to guide the content of questionnaires.

The first questionnaire (Q1) was pre-tested, by administering it to a sample of four female and two male former student-teachers who had subsequently obtained employment as teachers and two student-teachers who, although enrolled in the same year as the student-teachers in the study, were completing their Internships at a later date. Modifications were made according to their feedback. The first questionnaire (Q1) was sent by post, and a return reply-paid envelope, addressed to the university, was included.

5.6.1.1.1 Section A

Respondents had no suggestions for changes to “Section A: Your Levels of Stress”. Overall, they reported that the format and content of the DASS21, the basis of this section, were acceptable. This was illustrated by the following comment “it was all straight forward”.

5.6.1.1.2 Section B

Several design flaws were reported in “Section B: About You”, which was designed to provide demographic features and to obtain an understanding of student-teachers’ personal demands. Pre-test feedback suggested that tick-boxes be used, so that it was easy for student-teachers to simply tick their responses to selected items. Some rewording of items to clarify education and other personal demands, such as living arrangements, was also suggested.

The changes were made, and the final questionnaires reflect these amendments. For example, it was suggested that the instructions in Section B be changed from “Please circle a response, or provide a number in answer to EVERY item” to “Please tick your answer to EVERY item. Other revisions were made and new questions created
to reflect the changes. For example: “How many years of education (primary/secondary/tertiary full-time combined) have you completed in Australia?” was changed to become “Prior to your BEd studies, what is your previous highest level of education completed?” (see Appendix 1). One new question, “Where was your school education completed?” included a prompt “(what country?)” if the answer was other than Australia, and another new question provided an option about shared accommodation or living on campus.

5.6.1.1.3 Section C

No suggestions were made for changes to “Section C: Your Personality”. Respondents reported that the TIPI and PSMS items were easy to answer.

5.6.1.1.4 Section D

In “Section D: Your Stress Management and Well-being”, changes were made in the stem, following suggestions. From 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 and 4 = I usually do this a lot, the stems became 1 = Strongly Disagree, 2 = Disagree, 3 = Agree and 4 = Strongly Agree. Comments were made about the ambiguity of wording of the two alcohol questions from the Brief COPE, namely “I use alcohol or drugs to make myself feel better” and “I drink alcohol or take drugs, in order to think about it less”. Respondents said that “this sounded like addiction…” so items from another questionnaire to specify alcohol-related strategies (AUDIT) were adopted, and several Brief COPE items were rewritten for greater clarity (see 5.4.1.4).

5.6.1.1.5 Section E

In “Section E: Your Internship”, the format was changed to delete the numbers, the explanation given at the top of the page was modified, and all items were placed in a
table, to make it easier for future respondents. Few word changes were suggested. There was unanimous agreement from pre-test respondents that stress was associated with the Internship, and the prospect of obtaining a position in teaching, as it was based on their performance and rating at the Internship.

5.6.1.1.6 Section F

Several items were compressed in “Section F: Your Resources for Well-being during the Internship” into the single item “Make an appointment with a doctor or other health professional” and another item related to consulting with a supervising teacher was omitted, based on feedback including “I would generally not confide in my supervising teacher, but I am sure the university was there if I ran into any problems”. An item associated with sleep, considered important to psychological well-being, was also included in this section.

Pre-testing responses guided the formation and structure of the final questionnaires.

5.6.2 Semester 1 baseline data collection written questionnaire 1 (Q1)

The lecturer of an Education subject encouraged student-teachers in the 4-year Bachelor of Education degree to participate in this research. That lecturer expected that all student-teachers would attend lectures, and therefore agreed to this researcher’s request to attend a lecture in Week Three. The lecturer supported the purpose and process of the study, and also agreed to allow time for completion of the questionnaire Q1 during the lecture.

The researcher disseminated Q1, with an explanation of the study, and confidentiality, to all student-teachers who attended the lecture in Week Three of Semester One. This questionnaire was used to provide base-line data. An Information and Consent Form was included in the material handed to student-teachers (see
Appendix A). Student-teachers were assured about anonymity and confidentiality of their responses given in the questionnaire. All who were present were invited to participate in the study, and allowed to have lecture time in which to read the Consent Form, and ask questions.

It was explained to student-teachers that those who participated in the study by completing the baseline questionnaire (Q1) would also be followed up with a pre-Internship questionnaire (Q2), as well as one to be emailed to them during their Internship (although this changed, as described in 5.1.7, and a final questionnaire (Q3) would be administered post-Internship. These subsequent questionnaires would be briefer, and the third one, an e-mail questionnaire, would be sent to them at their nominated email address during the third week of the Internship. This email address would be de-identified, and the only means of connecting them to the previous questionnaire was the unique code they created in the first part of each questionnaire (see Appendix B).

Those who elected to participate in the study were provided with a separate slip of paper. They were instructed to write the email address they expected to use during their Internship on it so that email address would be used to disseminate a mid-Internship questionnaire (Q3). This paper was kept separate from questionnaires, to ensure confidentiality of those whose email addresses could be identifiable, and they were to be returned to office administration staff. It had been arranged that this person would print each one, and pass them to the researcher, thus separating the researcher from the student-teachers’ email address, de-identifying each student-teacher from the researcher, and therefore maintaining confidentiality.

The student-teachers were advised that it would take approximately 30-40 minutes to complete the questionnaire. When finished, they were to place the completed
questionnaires in boxes at the front of the room. Upon completion of the questionnaire, participants were to place this slip containing their email addresses in another box which had been provided at the front of the lecture theatre.

A head count of those present and the number of questionnaire responses was made. Of the 145 student-teachers who were enrolled, only 75 were present. The researcher made new arrangements and attended four subsequent tutorials in this subject. At those tutorials, those student-teachers who had not been at the lecture were provided with the same explanation, and invited to participate in the research. This resulted in completion of a further 30 questionnaires.

According to tutors, there were still students missing from tutorials, so permission was sought from the Faculty Head to send an email to all the student-teachers (including those who had already completed Q1). This was agreed to, and an email was sent via their lecturer. All student-teachers were invited to contact the researcher by email if they had any questions, and arrangements were made to leave copies of the questionnaire in the faculty for those who had been absent, to be completed on the spot, or by return at a later date. This was explained in the email. There were no email responses, and no questionnaires were collected.

5.6.3 Mid-year Pre Internship Data Collection Written Questionnaire 2 (Q2)

Prior to the Internship, during a special Capstone program, which was held during the semester break, the same sample of student-teachers were invited to complete a second, somewhat briefer, written questionnaire (Q2). Thus, 12 weeks after completing Q1, the student-teachers provided responses to the DASS21, the Brief COPE, CBT, mindfulness, and other coping items, and the items related to their expectations pertaining to the demands of the Internship.
5.6.4 Semester 2 Mid-Internship Cluster Group Meetings

As the Internship was reduced from ten to six weeks, a mid Internship email data collection strategy was abandoned. The researcher arranged to accompany the University Internship Co-ordinator to four Cluster Group meetings scheduled for mid Internship in Semester Two, and gather field notes. However, as the University Internship Co-ordinator communicated with student-teachers in rural, remote, interstate and overseas schools via a Skype connection, it was not possible to obtain anonymous qualitative data from them.

5.6.5 Data Collection Written Questionnaire 3 (Q3)

At Cluster Group meetings, a colour coded copy of Q3, the final written questionnaire, was disseminated. Student-teachers were instructed to complete Q3 “only” after the final week of their Internship. At the conclusion of the Internship, student-teachers were required to return to campus to submit their final Evaluation of their Internship for the University Internship Co-ordinator, so it was arranged that this questionnaire would be returned at the same time. The research stages and data collection schedule are summarised in Figure 5.1.

![Figure 5.1 Data Collection Stages](image-url)
5.7 Analysis of the Data and Methodological Problems

A range of analytic techniques were used to explore the research questions and to test the hypotheses, including correlations, repeated measures MANOVAs and step-wise regressions. To guard against over-interpretation, statistical significance and effect sizes are reported, where appropriate, in Chapter 6 of the results. Effects were considered to be small ($r < 0.1$), or large ($r > 0.5$) (see Cohen, 1988).

5.7.1 Preparing the data for analyses

To prepare the data for the statistical analysis, responses were manually entered into the computer SPSS using the Statistical Package for the Social Sciences SPSS (Version 17). Analyses were conducted to explore if there were any missing values. Reversed TIPI items were re-coded, frequencies were obtained, and descriptive statistics analyses were run, to be reported in text, and tables. Analyses were conducted to obtain Cronbach’s alpha, then correlations were undertaken to measure the strength and direction of the relationships between the scale scores and other interval scales and to investigate correlations between Depression, Anxiety and Stress and coping strategies. Regression analyses were then undertaken to further test whether the theoretical framework components were consistent with the data.

5.7.1.1 Tools for quantitative data analysis

The SPSS v. 17 program was used to provide a statistical analysis of the data. The quantitative method was also chosen to test the theoretical framework developed in Chapter 4, to further explain the phenomena in this study and to enhance the authenticity of the results of measures of psychological distress among student-teachers before and after their Internship and associations between these variables and their coping strategies.
5.7.1.2 *Creation of variable categories*

All responses from the three studies were entered into a single SPSS data file. New categories were created through transforming variables. The constructs of Depression, Anxiety and Stress, based on the literature reviewed in Chapter 3, whilst assigned to the category psychological distress, were explored separately as three distinct factors.

The DASS inventory has well-established sub-scales for Depression, Anxiety, and Stress, and so average scores for each of the seven items contained in each of the three sub-scales were obtained. This process was replicated with items from the Mastery Scale. Data from the three scales that had been created for this study of the personal and professional coping resources used by student-teachers, and the professional demands of their Internship, namely, the scales labelled Personal Coping and Resources Scale (PCRS), Professional Demands Scale (PDS) and Professional Resources Scale (PRS) were entered. After reverse coding the personality items, total scores for each of the two items contained in each of the three variables were obtained. The three personality variables were extroversion, neuroticism, also known as emotional stability, and conscientiousness.

5.7.1.3 *Contamination and missing values*

Student-teachers were known only to the researcher through codes used to match Q1, Q2 and Q3 responses. When the University Internship Convenor and researcher visited the schools prior to Q3, whilst participating in Cluster Group meeting, student-teachers’ names were not used in conversations. Student-teachers’ names remained unknown to the researcher at each of the four meetings, and no individual conversations using names, occurred.
5.7.1.4 Selection bias

As outlined in Chapter 5.3 above, this was a convenience sample of fourth year B. Ed. (primary school) student-teachers in Queensland. Data from Education Queensland enabled comparisons with characteristics such as age, between Queensland teachers and student-teachers. These student-teachers were considered representative of other final year undergraduate student-teachers in the State of Queensland. The researcher was initially unaware that several student-teachers would undertake their Internship in other areas of Queensland, in other Australian States and in rural/remote or international settings. However, once known, the choice was made to exclude those student-teachers’ Q3 responses from the final quantitative data analyses.

5.7.1.5 Missing responses at Q1, Q2 and Q3

There were no disproportionate missing responses in the Time 1 data set, although there were two respondents who had no variation in their responses to Section C Personality characteristics, and Section E respectively. As these were 7-point scales, and the responses were in the mid-range, they were not expected to unduly impact on the overall result. At Time 2, there were fewer respondents than at Time 1, and one respondent had all missing responses, so his responses were not included in the analyses. At Time 4, of all 38 student-teachers who responded, there were no missing responses.

5.7.1.6 Data integrity: validity and reliability

As the findings of this study rely on questionnaire responses, the researcher paid a great deal of attention to data integrity checks. As a preliminary first step, all questionnaires were examined to determine that each question had been answered. Data to test demands, personality, mastery, psychological distress, coping and resources were examined to identify the accuracy of data entry, and missing data.
An overview of the data was undertaken, followed by a more formal analysis using statistical measures to analyse the characteristics of student-teachers from the first questionnaire (Q1), and to explore the differences between the three occasions on which the questionnaires (Q1, Q2 and Q3) were administered.

5.7.1.7 Reliability of standardised measures

The authors of established scales, DASS (Depression, Anxiety and Stress Scale; (Lovibond & Lovibond, 1995), TIPI (Ten Item Personality Inventory; (Gosling et al., 2003), PSMS (Pearlin-Schooler Mastery Scale; (Pearlin & Schooler, 1978), Brief COPE (Carver, 1997) and AUDIT (Alcohol use Disorders Identification Test; (Babor et al., 2001) reported adequate reliability for these measures.

The coefficient alphas for these scales, when administered at Time1 in this study, ranged from reasonably good levels of reliability (eg: $\alpha = .896$ for the Depression items in the DASS), to lack of reliability (eg: $\alpha = -.395$ for the Emotional Stability (neurotic) characteristic in the personality (TIPI) scale). The violations to the reliability of the TIPI items were noted and the data were re-checked. New personality factors were created, and these are detailed in Results Chapter 6.

5.7.1.8 Reliability analyses of non standardised measures and the qualitative research in this study

The reliability of the Professional Demands Scale (PDS), the Professional Resources Scale (PRS) and the Personal Coping Resources Scale (PCRS), the three personal and professional demands and resources scales created for this study, was improved by deleting, and reversing, some items in each scale. These scale factors are presented in Chapter 6.

In order to be credible, it is important that, in addition to placing attention on the design of the study, qualitative research is both reliable, and generalisable. Participants
were verbally offered the opportunity to view the results, and comment on responses to ensure that the interpretation was correct, by emailing the researcher. Internal validity was addressed through reading, re-reading and categorising the data multiple times.

Consideration was given to the difficulty in education and the social sciences of the degree to which the qualitative findings could be replicated in another situation or setting. Student-teachers’ school environments, behaviours, situations, and experiences were not expected to be static, so information about the Internship requirements was considered sufficient for the researcher to determine whether or not the findings could be transferred to other settings. This richness of the descriptions contributed to the external validity of the study, and the student-teachers’ own words were used to convey what has been learned about the phenomena. Nevertheless, it was not anticipated that the research would provide final answers to the questions, as the issues could be widely discussed. However, it was hoped that the findings would enlighten teacher educators, and institutions charged with employing student-teachers.

5.7.2 Data analysis of descriptive and inferential statistics

Once prepared and organised, the data were analysed using SPSS v. 17. The answers to the questions posed and the hypotheses generated are presented using descriptive statistics in Chapter 6. These indicate the spread of student-teachers’ scores on the three questionnaires, represented by variance, standard deviation and range. Comparisons, to determine how particular scores relate to others, are shown as percentile ranks.

5.7.3 Qualitative data

An overview of the qualitative data was undertaken to determine if the responses from the questionnaires, in general, generated patterns and matched the anticipated
responses from the questions. This data was transcribed and thematically analysed. The results are presented with Cluster Group meeting data in Chapter 7.

Cluster Group meeting data were recorded as notes taken in the field at each of the four meetings. The data were then transcribed, and the student-teachers’ comments were analysed according to themes found. The quantitative and qualitative data analyses processes are summarised in Table 5.7.

Table 5.7 Summary of analytic steps for quantitative data from Q1, Q2 and Q3

<table>
<thead>
<tr>
<th>Step</th>
<th>Process and Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Responses entered into SPSS v. 17</td>
</tr>
</tbody>
</table>
| 2    | Screen data for outliers  
Specify alpha level for significance  
Analyse descriptive statistics and report extended demographic features |
| 3    | Conduct Exploratory Factor Analyses (EFA) |
| 4    | Calculate and report alpha reliability coefficients for analyses of Q1, Q2 and Q3 |
| 5    | Correlations, reporting associations between variables of interest |
| 6    | Repeated measures MANOVAs to test effects of time for each of the scales |
| 7    | Regression analyses to test predictions |
| 8    | Report statistical findings for the seven questions and associated hypotheses |
| 9    | Thematically analyse qualitative data |

5.8 Chapter Summary

The mixed-method design of the thesis resulted in two distinct sorts of data. Each data set related to the other, but analysis was undertaken by different strategies. The method of analysis for the quantitative data is outlined first, followed by the
qualitative data analysis. Although the study was primarily quantitative, some qualitative data was collected to enrich the data.

Following pre-testing of the instrument, once changes had been made based on feedback from the Preliminary Pre-Test, a three-part major study, using questionnaires, was conducted. The pre-testing guided revisions of the content and design of the questionnaires, and minor adaptation of the main questionnaire was undertaken.

The study design involved repeat testing of the opinions of a cohort of fourth year Primary school student-teachers. After baseline demographic data had been collected (Q1), together with personal demands, student-teachers responded to six items from the Ten Item Personality Inventory (TIPI), seven items from the Pearlin-Schooler Mastery Scale (PSMS), psychological distress, coping strategies, professional demands and resources, and barriers to seeking support.

Likert scale questionnaire responses were scored using SPSS v. 17, and qualitative data were analysed thematically. Reliability analyses of the three instruments were conducted. Internal consistency reliability co-efficients, Cronbach’s alpha (α), ranged from .86 to .52.

Student-teachers were provided with information about the purpose and design of the study, and their individual consent was sought. Ethical considerations and approval processes were addressed, and at all times student-teachers were assured that their responses would be confidential, and anonymous.
Chapter 6 Results of Quantitative Analyses

In this chapter, the quantitative results are presented using the descriptive and inferential statistics obtained from the 105 student-teachers who responded to at least one of three questionnaires (Q1, Q2 and Q3) about their psychological distress, personal demands, and the demands of their Internship, as well as their personal and professional coping strategies before, during and after their Internship. The statistical data have been used to generate associations and predictions, and these will be elaborated in the qualitative data in Chapter 7.

The quantitative data were collected through “Well-being” questionnaires that were administered on three occasions (T1, T2 and T4). The first occasion (T1) was in Week Three of Semester One of the academic year, and these results provide the baseline data. The second occasion (T2) provides student-teachers’ responses made immediately prior to student-teachers undertaking their Internships. Student-teachers’ qualitative responses were obtained at Time 3, during their Internship, and these findings are discussed, together with the qualitative responses included in the three questionnaires, in Chapter 7. The third “Well-being” questionnaire was completed by student-teachers at Time 4, immediately following the completion of their Internship.

This chapter explores the statistical data in two ways and these results are presented in the following order:

First, in Section 6.1, the descriptive statistics are reported. These provide an assessment of the demographic and personal demand variables of student-teachers as they began their final fourth year of pre-service study. Comprehensive descriptive statistics provide student-teachers’ demographic profiles according to their gender, age group and educational attainment. Their personal demands, including relationships and
child-rearing responsibilities, and university, work and financial responsibilities are then reported.

This is followed in Section 6.2 by exploratory factor analyses of each of the established scales, and those non-standardised composite scales created for this thesis. The reliability of the new scales, demonstrated by Cronbach’s alpha are presented. Descriptive statistics for items from all the scales used in the study (DASS, TIPI, PSMS, PDS, PCRS and PRS), are then presented in Section 6.3. Correlations exploring whether or not there were relationships between depression, anxiety, stress and other variables representing student-teachers’ demands and coping, are then presented in Section 6.4.

Inferential statistics are shown in Section 6.5 which includes Analyses of Variance (ANOVA) results, comparing student-teachers’ responses to the three questionnaires delivered at Time 1 (as a baseline), Time 2 (pre Internship) and Time 4 (post Internship). The next section (6.6) provides results for the seven research questions outlined in Chapter 1 (1.4). It includes several analyses of psychological distress (6.6.1), correlations between significant Personal Demands, and Depression, Anxiety and Stress (6.6.2 and 6.6.3), paired samples test results comparing Depression, Anxiety and Stress (6.6.4), correlations between Coping Factors, Resources and Barriers, and Depression, Anxiety and Stress (6.6.5 and 6.6.6) and results of regression analyses are reported in Section 6.6.7, to identify which demands and coping strategies are significant predictors of psychological distress. Finally, in Section 6.7, the statistical data reported in this chapter are summarised and further examined in terms of the seven specific research questions and the accompanying seven hypotheses addressed by the study.

In the following chapter, Chapter 7 Results and Analysis of Qualitative Data, the quantitative results are expanded through analysis of themes from the qualitative data.
collected from the open-ended questions and responses provided to each of the questionnaires (Q1, Q2 and Q3), and given by student-teachers in Cluster Group meetings which were held at Time 3 (mid Internship).

Both sets of findings from Chapter 6 and Chapter 7 are discussed in Chapter 8 Discussion. Implications, major issues and recommendations based on the findings are then presented in Chapter 9 Conclusion.

The first analysis, to assess the demographic and personal demand variables of student-teachers as they began their fourth and final year of pre-service study, is now presented.

6.1 Descriptive Statistics

Data were screened for outliers, violations of statistical assumptions and missing data prior to undertaking statistical analyses. In this section, the demographic profile of the student-teachers at baseline (Time 1) is identified.

6.1.1 Demographic variables (categorical values)

The demographic independent variables include details of gender, age and education. Age was identified according to age-ranges rather than ages in years. Education was categorised according to the highest level of education undertaken by the student-teachers prior to their enrolment in the primary teaching degree, and the rank they attained in third year pre-service education was requested, together with the country and level of final year of school education, as suggested in the pre-test (see 5.6.1). University education ranks were represented by a Grade Point Average (GPA), using the following numbers: 7 (High Distinction), 6 (Distinction), 5 (Credit), and 4 (Pass). School education results in Queensland are shown as an Overall Position (OP), and in these findings, they are provided as a scaled number, between 1 (highest) and 25 (lowest).
Values that fell outside the range of possible values for categorical values were explored and errors were amended. The descriptive statistic data for the categorical variables of gender, age range, highest level of education, and where schooling was completed, are shown as frequencies in Table 6.1.

**Table 6.1 Student-Teachers’ Demographic Characteristics (N = 105)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value</th>
<th>$n$</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>24</td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81</td>
<td>77.1</td>
</tr>
<tr>
<td>Age Range (years)</td>
<td>20-25</td>
<td>70</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>26-30</td>
<td>15</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>31-35</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>36-40</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>41-45</td>
<td>6</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>46-50</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>missing</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Education Highest level</td>
<td>Year 10</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>Year 12</td>
<td>72</td>
<td>68.6</td>
</tr>
<tr>
<td></td>
<td>Other tertiary</td>
<td>29</td>
<td>27.6</td>
</tr>
<tr>
<td>GPA third Year B.Ed.</td>
<td>7</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>26</td>
<td>24.8</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>63</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>11</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Not provided</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Where school education completed</td>
<td>Australia/NZ</td>
<td>103</td>
<td>98.1</td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Year 12 OP result</td>
<td>1-3</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td>4-7</td>
<td>21</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>8-12</td>
<td>35</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>13-18</td>
<td>23</td>
<td>21.9</td>
</tr>
<tr>
<td></td>
<td>19-23</td>
<td>7</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Not provided</td>
<td>16</td>
<td>15.2</td>
</tr>
</tbody>
</table>

6.1.1.1 *Personal (gender and age-range)*

Of the 105 Bachelor of Primary Education student-teachers, the largest proportion (77%, N=81) were female. The student-teachers’ ages ranged from 20 to 49 years, with an average age, calculated from the statistical data, of 25.6 years (SD =
6.57). The positive skewness of their ages indicated that the majority of the student teachers were in their early twenties.

Student-teachers’ age-related data were grouped into GenY (20-35 years), GenX (36-45 years) and Baby Boomer (>46 years). The majority (N=70) were 20-25 years of age, that is GenY. Less than 13% of the total number of student-teachers was more than 36 years of age. Therefore, in terms of percentages, a more even division of the sample by age was performed. Ages of student-teachers were thus transformed into blocks, each containing 25% of the student-teacher sample. These age ranges were within 20-21 years, 22-23 years, 24-27 years, and a more widely ranging age group, being 28-49 years.

6.1.1.2 **Education (highest level, OP, where completed and GPA)**

The majority of the 105 student-teachers, (68.6%, N=72), reported having completed Year 12, the final year of school education. Another 28% (N=29) reported completing tertiary studies not including teacher education. The four remaining student-teachers had completed only Year 10 of their school education.

Of those completing Year 12, the largest percentage reported achieving an OP in the range of 8-12 (33%, N=35). Approximately equal numbers of student-teachers reported OPs either side of this, being in the range of 4-7 (20%, N=21) and 13-18 (22%, N=23). Of the remaining student-teachers, seven reported OPs of between 19 and 23, and three reported achieving an OP in the range of 1-3.

All but two student-teachers reported completing their education in Australia. The largest percentage (60%, N=63) of the total number of student-teachers in the study reported achieving a GPA of 5 after their third year of university study. Of the others, 26 student-teachers reported a GPA of 6, 11 student-teachers reported a GPA of 4, and one student-teacher reported obtaining a GPA of 7.
6.1.2 Personal demand variables

The categorical personal demand variables assessed in this study included marital status, living arrangements, family responsibilities, arrangements for paying university fees and paid work commitments. Living arrangements were grouped into four categories: living alone, with parents, with a partner, or living with others. Family responsibilities referred to raising children. Options for payment of university fees included payment of fees in advance, payment by parents, or repayment through the taxation system when working in the future. Paid employment options included both part-time and full-time work and number of hours worked.

6.1.2.1 Personal demands (relationships and child-rearing responsibilities)

A slight majority (62%, N=65) of the 105 student-teachers in this study reported being single. Others reported being either married or in defacto relationships. Consistent with these results, the largest percentage reported that they lived with their parent(s) (53%, N=45), and a slightly smaller percentage (36%, N=38) reported living with their partner. Another 16% (N=17) reported sharing accommodation with others, and five reported living alone.

In terms of responsibilities for raising children, 16% (N=17) of the student-teachers reported being responsible for raising children, and three reported being the sole parent. Of those raising children, five were responsible for children in the 0-5 year age range, eight for children in the 6-12 year age range, and the remaining four reported having responsibility for children in the 13-19 year age range.

6.1.2.2 Personal demands (university, work and financial responsibilities)

The majority (83%, N=87) of the 105 student-teachers reported that they would be paying back their university fees, once employed, through the taxation system. There
were 11 student-teachers who reported that they had paid their fees in advance, and seven reported that their parents had paid their fees in advance.

The majority of the student-teachers (78%, N=82) worked part-time. Six student-teachers worked full-time, and 17 reported that they did not work in any paid employment. However, as only 13 student-teachers did not report their number of hours in paid employment, this result could suggest that some of the 17 did, in fact, engage in work, but because it was on a casual basis, rather than in part-time or full-time work, they were unable to match it to one of the categories provided.

Of the 88 student-teachers referred to above who reported working in paid employment, the largest percentage (34%, N=30) worked between 16 and 20 hours per week. Approximately equal numbers worked both 6-10 hours (20%, N=18), and 11-15 hours (22%, N=20). Of the remainder, four reported working 1-5 hours per week, nine reported working 21-25 hours per week and another seven reported working in paid employment for more than 26 hours per week.

6.2 Exploratory Factor Analyses

This section reports on exploratory factor analyses (EFA) performed to verify dimensions of the DASS, TIPI, PSMS, PDS, PCRS and PRS, and/or reduce the items to a smaller number representing common sub-scales. Prior to performing these EFAs, the data were assessed.

Correlation matrices were inspected to ascertain that the Kaiser-Meyer-Oklin values were at least equal to the recommended minimum value of .6 (Kaiser, 1970) and that Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance. Items that did not correlate with any others at greater than .25 were excluded from further analyses. The remaining items were then subjected to exploratory Principal Components Analyses, with varimax rotation. Factors with eigenvalues greater than 1.0 were
6.2.1 Exploring the factor structure from six items of the Ten Item Personality Inventory (TIPI)

The 6-item version of TIPI in previous studies has resulted in a three-factor structure (extraversion, conscientiousness and emotional stability/neuroticism). In this study, the exploratory factor analysis did not reproduce these three personality factors. In order to extract principal components, and determine an appropriate factor structure, the second item in each pair was reversed. Reliability values for the paired conscientiousness and emotional stability variables were negative (Cronbach's alpha were $\alpha = -0.324$ and $-0.165$ respectively), thus new personality measures were constructed following factor analyses.

Inspection of the correlation matrix revealed the presence of coefficients of .60 and above. The Kaiser-Meyer-Oklin value of 0.61 was satisfactory (Kaiser, 1970), and Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance $p < .01$. The two components derived from the six items (Principal Components Analysis, Varimax rotation, factor loading $\geq 0.25$ visible) are shown in Table 6.2.

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraverted, enthusiastic</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Not anxious, easily upset (reversed)</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>Dependable, self-disciplined</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>Reserved, quiet (reversed)</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Disorganised, careless (reversed)</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>Calm, emotionally stable</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td>Eigen value</td>
<td>1.75</td>
<td>1.16</td>
</tr>
<tr>
<td>Variance explained</td>
<td>29.2%</td>
<td>19.3%</td>
</tr>
</tbody>
</table>
Although the two extroversion items [“extraverted, enthusiastic” and reserved, quiet” (reversed)] are likely to be relevant measures of personality, in these analyses they loaded on Factor 1 and Factor 2 respectively. Student-teachers’ responses to the six TIPI items were revealed as two distinct factors. The first factor comprised two conscientiousness items and one extroversion item (dependable/self-disciplined, reserved/quiet (reversed) and disorganised/careless (reversed) respectively. It was referred to as Mental Strength.

A second factor was derived from one extroversion item and two emotional stability items (extroverted/enthusiastic, not anxious/easily upset (reversed), and calm/emotionally stable). It was referred to as Emotional Strength.

6.2.2 Exploring the factor structure from the Pearlin-Schooler Mastery Scale (PSMS)

Inspection of the correlation matrix revealed the presence of coefficients of .47 and above. The Kaiser-Meyer-Oklin value was 0.73, and Bartlett’s Test of Sphericity was 197.04, $p < .001$. An exploratory factor analysis of the seven mastery items in the PSMS was conducted after item 6 (“What happens to me in the future mostly depends on me”) and item 7 (“I can do just about anything I put my mind to”) were reversed in order to provide an interpretable finding, as shown in Table 6.3.

<table>
<thead>
<tr>
<th>Items</th>
<th>Lack of mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have little control over things that happen to me</td>
<td>0.64</td>
</tr>
<tr>
<td>There is no way I can control problems I have</td>
<td>0.74</td>
</tr>
<tr>
<td>There is little I can do to change my life</td>
<td>0.81</td>
</tr>
<tr>
<td>I often feel helpless dealing with life</td>
<td>0.75</td>
</tr>
<tr>
<td>Sometimes I feel I am being pushed around</td>
<td>0.59</td>
</tr>
<tr>
<td>What happens in future does not depend on me</td>
<td>0.47</td>
</tr>
<tr>
<td>I can do very little, just about nothing</td>
<td>0.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigen value</th>
<th>2.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance explained</td>
<td>42.21%</td>
</tr>
</tbody>
</table>
The single distinct mastery factor, in Table 6.3, indicates that student-teachers felt limited in their mastery over external events.

6.2.3 Exploring the factor structure of Professional Demands Scale (PDS) at the item to scale level

Two factors were identified via an exploratory factor analysis of the 12 items comprising the composite Professional Demands Scale. Inspection of the correlation matrix revealed the Kaiser-Meyer-Oklin value was 0.67, and Bartlett’s Test of Sphericity was $270.19, p < .001$.

Table 6.4 Two component factor solution for the 11-item PDS items (one reversed, one excluded)

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor 1. Difficulties</th>
<th>Factor 2. Ease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel prepared to teach outside expertise</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>Comfortable receiving negative feedback</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>Comfortable receiving negative feedback from teacher</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>Difficult to manage workload</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>Adversely challenged to manage new curriculum</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Difficult balancing professional and personal commitments</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>Internship main cause of stress</td>
<td>.52</td>
<td></td>
</tr>
<tr>
<td>Difficulty managing student behaviour</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>Comfortable being evaluated by classroom teacher</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>Let on if stressed even if it harms chances</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>Competent using technology</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>Not expecting to achieve S1 rating</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>Eigen value</td>
<td>3.06</td>
<td>1.79</td>
</tr>
<tr>
<td>Variance explained</td>
<td>27.79%</td>
<td>16.31%</td>
</tr>
</tbody>
</table>

Contrary to expectations, responses did not fall into two factors containing teaching skills and career items. However, in order to obtain a solution, as indicated in Table 6.4, by reversing the career item “Intend to achieve an S1 rating”, and excluding the time management item “Find difficulty managing demands and time”, the factors did load, and the Principal Components Analyses permitted a two factor structure for the remaining 11 items.
The first component, the content of which was related to potential Internship challenges, loaded on six of the items, and was named Difficulties. The second component, the content of which was related to the student-teachers’ confidence in meeting their professional demands, was named Ease.

6.2.4 Exploring the factor structure of the Personal Coping Scale (PCS)

Prior to performing an exploratory factor analysis (EFA) on the 22 PCS items, data were assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .40 and above. The Kaiser-Meyer-Oklin value was 0.57 and Bartlett’s Test of Sphericity was 501.74, $p < .001$. Exploratory factor analysis revealed the presence of five principal components with eigenvalues greater than 1 as shown in Table 6.5.
Table 6.5 Five component solution for the 21-item (PCS) coping scale (one reversed, one excluded)

<table>
<thead>
<tr>
<th>Items</th>
<th>MdflCBT</th>
<th>SH</th>
<th>Diseng</th>
<th>Ex alcohol</th>
<th>EmRel</th>
</tr>
</thead>
<tbody>
<tr>
<td>I remind myself to focus on the present</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do something about the situation</td>
<td>0.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tell myself to look differently at situation</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look for something good in situation</td>
<td>0.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort and understanding from family</td>
<td>0.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive self-talk CBT rational cognition</td>
<td>0.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look up websites on ideas to cope</td>
<td></td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice yoga, relaxation</td>
<td></td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I refer to self-help books and CDs</td>
<td></td>
<td>0.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I focus on breathing and relax</td>
<td></td>
<td></td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretend it hasn’t really happened</td>
<td></td>
<td></td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Give up trying to deal with it</td>
<td></td>
<td></td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criticize myself</td>
<td></td>
<td></td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn to live with it</td>
<td></td>
<td></td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often have more than 6 drinks of alcohol</td>
<td></td>
<td></td>
<td></td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>Drink two glasses of alcohol daily to cope</td>
<td></td>
<td></td>
<td></td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Exercise regularly</td>
<td></td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Do something to think about it less</td>
<td></td>
<td></td>
<td></td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Talk about worries to friends</td>
<td></td>
<td></td>
<td></td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>Not reluctant to discuss with others</td>
<td></td>
<td></td>
<td></td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>Get upset and let out emotions</td>
<td></td>
<td></td>
<td></td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Eigen value</td>
<td>3.11</td>
<td>2.34</td>
<td>2.03</td>
<td>1.71</td>
<td>1.54</td>
</tr>
<tr>
<td>Variance explained</td>
<td>14.83%</td>
<td>11.12%</td>
<td>9.67%</td>
<td>8.13%</td>
<td>7.34%</td>
</tr>
</tbody>
</table>

Note. MdflCBT refers to Mindfulness-based CBT strategies, SG refers to self-help, Diseng refers to Disengagement, Ex alcohol includes exercise and drinking alcohol, and EmRel refers to emotional release strategies.

After excluding one item “Remind myself to focus on the present” in order to reach discrete factors, the exploratory factor analysis, as indicated above in Table 6.5, identified that the remaining 21 coping strategy items could be expressed as five distinct component factors. The five component factor solution explained a total of more than half (51.01%) of the variance. These five component factors were described as follows:

Component 1: Mindfulness Cognitive Behaviour Therapy approaches (MdflCBT). This coping strategy factor included components of mindfulness and CBT strategies as well as family support (six items).

Component 2: Self Help (SH). This coping strategy factor included components of self-help and relaxation (four items).
Component 3: Disengagement (Diseng.). This coping strategy factor included the components disengagement and self-criticism (four items).

Component 4: Using exercise or drinking alcohol for distraction (Ex alcoh.). This coping strategy factor included exercise strategies, drinking alcohol and doing something to think less about stress (four items).

Component 5: Emotional Release (EmRel.). This coping strategy factor, referred to as emotional release, included talking to friends and others and releasing emotion (three items).

6.2.5 Exploring the factor structure of the Professional Resources Scale (PRS)

A final exploratory factor analysis was undertaken to identify the factor structure underlying the remaining 10 coping resource and barrier items. Inspection of the correlation matrix revealed the Kaiser-Meyer-Oklin value was 0.58, and Bartlett’s Test of Sphericity was 1.68, $p < .001$.

Table 6.6 Three component factor solution (two excluded) for Professional Resources Scale (PRS) items

<table>
<thead>
<tr>
<th>PRS Rotated Component Factor Items</th>
<th>Factor 1 Factor 2 Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>brrs</td>
</tr>
<tr>
<td>Sleep poorly and expect it will be worse</td>
<td>.68</td>
</tr>
<tr>
<td>Seek support from university supervisor</td>
<td>.79</td>
</tr>
<tr>
<td>Appointment with doctor or other health professional</td>
<td>.69</td>
</tr>
<tr>
<td>Use stress mgt techniques already taught</td>
<td>.86</td>
</tr>
<tr>
<td>Keep it to myself</td>
<td>.84</td>
</tr>
<tr>
<td>Not tell anyone as they would judge me</td>
<td></td>
</tr>
<tr>
<td>Not work so hard to make sure I manage it by myself</td>
<td></td>
</tr>
<tr>
<td>Not take it too seriously</td>
<td></td>
</tr>
</tbody>
</table>

| Eigen value | 2.31 | 1.51 | 1.21 |
| Variance explained | 28.82% | 18.88% | 15.14% |

Note. Brrs refers to Barriers to help-seeking, profsup refers to Professional Support, and relax refers to strategies for Relaxation

In order to obtain a solution that would load for interpretation, two items “Share professional concerns with friends” and “Do none of this as it would not help” were
excluded. As indicated in Table 6.6, the remaining eight items were expressed as three distinct components.

Component 1: Barriers to seeking help and coping with psychological distress (brrs). This factor, consisting of three items, included strategies and behaviours that may be barriers to coping, including sleeping poorly, and keeping worries to oneself.

Component 2: Professional Support (profsup): This factor included three items related to seeking professional help from medical or health personnel, using pre-existing strategies already taught to them, or seeking support from one’s supervisor. The item “Work harder and manage it myself” was reversed, so that it then fitted with the remaining humour item, and together they formed a third factor, as follows:

Component 3: Relaxation (relax).

6.2.6 Reliability of scale scores

An initial item-scale reliability analysis (Cronbach’s alpha) of the full set of multi-item scales was taken at baseline (Time 1) with the full sample of student-teachers. These scales are arranged in descending order of Cronbach’s alpha values, as shown in Table 6.7.
Table 6.7  Cronbach’s alpha values for each of the 16 scales at Time1

<table>
<thead>
<tr>
<th>Scales</th>
<th>Cronbach's alpha</th>
<th>N items</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>0.896</td>
<td>7</td>
</tr>
<tr>
<td>Stress</td>
<td>0.891</td>
<td>7</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.864</td>
<td>7</td>
</tr>
<tr>
<td>Mastery</td>
<td>0.756</td>
<td>7</td>
</tr>
<tr>
<td>Barriers (PRS)</td>
<td>0.730</td>
<td>3</td>
</tr>
<tr>
<td>Difficulties (PDS)</td>
<td>0.715</td>
<td>6</td>
</tr>
<tr>
<td>CBT and mindfulness (PCRS)</td>
<td>0.691</td>
<td>6</td>
</tr>
<tr>
<td>Self-help (PCRS)</td>
<td>0.660</td>
<td>4</td>
</tr>
<tr>
<td>Ease (PDS)</td>
<td>0.638</td>
<td>5</td>
</tr>
<tr>
<td>Disengagement (PCRS)</td>
<td>0.618</td>
<td>4</td>
</tr>
<tr>
<td>Professional Support (PRS)</td>
<td>0.573</td>
<td>3</td>
</tr>
<tr>
<td>Emotional release (PCRS)</td>
<td>0.521</td>
<td>3</td>
</tr>
<tr>
<td>Exercise and drink (PCRS)</td>
<td>0.485</td>
<td>4</td>
</tr>
<tr>
<td>Emotional strength</td>
<td>0.353</td>
<td>2</td>
</tr>
<tr>
<td>Mental Strength</td>
<td>0.302</td>
<td>2</td>
</tr>
<tr>
<td>Relax (PRS)</td>
<td>0.255</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 6.7 of Time 1 measures shows that Cronbach’s alpha reliability was strongest when the number of items in a composite factor was largest (seven items), and declined as a function of the number of items, with the exception of Barriers (3 items). Cronbach’s alpha values were greater than .80 for all three DASS sub-scales (Depression, Anxiety, and Stress), each of which contained 7 items.

Cronbach’s alpha reliability values were greater than .70 for the Mastery subscale developed from the EFA, the Professional Support (PRS) subscale and the Difficulties (PDS) subscale. Cronbach’s alpha reliability for CBT and mindfulness, Self-help and Disengagement (PCRS) and Ease (PDS) was obtained where values were greater than .60. In contrast, Cronbach’s alpha values were less reliable, being less than .40 for three subscales with only two items each, namely Emotional and Mental strength (personality) and Relax (PRS).
6.3 Descriptive Scale Statistics for the Multi-Items Scales

This section provides the student-teachers’ average scores at Time 1 on the standardised and composite scales of psychological distress, personality, mastery, professional Internship demands, coping strategies and resources in each of the questionnaires.

6.3.1 Depression, Anxiety and Stress Scale (DASS)

The statistics for the student-teachers’ responses to the DASS 21, according to a 4-point rating scale from 0 (*Did not apply to me at all*) to 4 (*Applied most of the time*), are presented in Tables 6.8, 6.9 and 6.10.

*Table 6.8 Descriptive statistics for the seven DASS depression items at baseline (Time 1)*

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found it difficult to work up initiative</td>
<td>105</td>
<td>1.28</td>
<td>.86</td>
<td>.45</td>
<td>-.32</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I couldn’t experience any positive feeling</td>
<td>102</td>
<td>.71</td>
<td>.89</td>
<td>1.14</td>
<td>.51</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt downhearted</td>
<td>105</td>
<td>.65</td>
<td>.91</td>
<td>1.39</td>
<td>1.08</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I was unable to become enthusiastic</td>
<td>105</td>
<td>.59</td>
<td>.84</td>
<td>1.40</td>
<td>1.26</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I had nothing to look forward to</td>
<td>105</td>
<td>.43</td>
<td>.78</td>
<td>1.90</td>
<td>2.94</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt I wasn’t worth much</td>
<td>105</td>
<td>.35</td>
<td>.71</td>
<td>2.04</td>
<td>3.49</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt life was meaningless</td>
<td>105</td>
<td>.18</td>
<td>.51</td>
<td>3.26</td>
<td>11.50</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>DASS Depression (Average)</td>
<td>102</td>
<td>.58</td>
<td>.61</td>
<td>1.71</td>
<td>2.93</td>
<td>.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

As indicated in Table 6.8, of the items that reflect depressive behaviours, student-teachers were most likely to report to they found it difficult to work up initiative. Their mean score (Mean = 1.28) on this item was equivalent to stating that this condition applied between some of the time and all of the time.

They were least likely to report that they felt life to be meaningless (Mean = 0.18). This mean score was equivalent to stating that depression as a condition did not apply to them at all. The average score (Mean = 0.58), taken across all seven
depression items, indicated that most student-teachers did not agree that the depression statements applied to them within the past week.

*Table 6.9  Descriptive statistics for the seven DASS anxiety items at baseline (Time 1)*

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was aware of dry mouth</td>
<td>105</td>
<td>.86</td>
<td>.99</td>
<td>.89</td>
<td>-.35</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I was worried about situations I might panic</td>
<td>105</td>
<td>.66</td>
<td>.82</td>
<td>1.14</td>
<td>.70</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt close to panic</td>
<td>105</td>
<td>.48</td>
<td>.79</td>
<td>1.60</td>
<td>1.75</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I was aware of action of my heart</td>
<td>105</td>
<td>.41</td>
<td>.72</td>
<td>1.76</td>
<td>2.55</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt scared with no good reason</td>
<td>105</td>
<td>.39</td>
<td>.63</td>
<td>1.61</td>
<td>2.51</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I experienced difficulty breathing</td>
<td>105</td>
<td>.36</td>
<td>.72</td>
<td>1.98</td>
<td>3.10</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I experienced trembling</td>
<td>105</td>
<td>.32</td>
<td>.70</td>
<td>2.37</td>
<td>5.28</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>DASS Anxiety (average)</td>
<td>105</td>
<td>.50</td>
<td>.57</td>
<td>1.71</td>
<td>3.03</td>
<td>.00</td>
<td>2.86</td>
</tr>
</tbody>
</table>

As indicated in Table 6.9, with regard to the anxiety items, student-teachers were most likely to report that they were aware of a dry mouth (Mean = 0.86), with their responses falling between 0 (*Did not apply to me at all*) to 1 (*Applied some of the time*). They were least likely to report that they experienced trembling (Mean = 0.32). Their mean score across the seven anxiety items was 0.50.

*Table 6.10  Descriptive statistics for the seven DASS stress items at baseline (Time 1)*

<table>
<thead>
<tr>
<th>Statistics</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found it hard to wind down</td>
<td>105</td>
<td>1.40</td>
<td>.97</td>
<td>.29</td>
<td>-.86</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I tended to overreact</td>
<td>105</td>
<td>1.16</td>
<td>.97</td>
<td>.56</td>
<td>-.59</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I found myself getting agitated</td>
<td>105</td>
<td>1.15</td>
<td>.89</td>
<td>.46</td>
<td>-.42</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I found it difficult to relax</td>
<td>105</td>
<td>1.10</td>
<td>1.01</td>
<td>.59</td>
<td>-.71</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I was intolerant</td>
<td>105</td>
<td>1.00</td>
<td>.95</td>
<td>.75</td>
<td>-.27</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I felt I was rather touchy</td>
<td>105</td>
<td>.87</td>
<td>.92</td>
<td>.80</td>
<td>-.27</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>I was using a lot of nervous energy</td>
<td>105</td>
<td>.82</td>
<td>.91</td>
<td>1.00</td>
<td>.27</td>
<td>.00</td>
<td>3.00</td>
</tr>
<tr>
<td>DASS Stress (average)</td>
<td>105</td>
<td>1.07</td>
<td>.74</td>
<td>.84</td>
<td>.05</td>
<td>.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Student-teachers’ most likely stress response, shown in Table 6.10, was that they found it hard to wind down (Mean = 1.40). Responses to items on this sub-scale ranged
between 1 (Applied some of the time) and 2 (Applied a good part of the time). They were least likely to report using a lot of nervous energy (Mean = 0.82), with responses in-between 0 (Did not apply at all) and 1 (Applied some of the time). Their mean score across the seven stresses was 1.07.

Overall therefore, at Time 1, on average, the student-teachers reported higher levels of stress (Mean = 1.07) than anxiety (Mean = 0.50) or depression (Mean = 0.58).

6.3.2 Items from the Ten Item Personality Inventory (TIPI)

This section reports on the six items of interest to which student-teachers’ responses ranged from 1 (Disagree Strongly) to 7 (Agree Strongly), as shown in Table 6.11.

Table 6.11 Descriptive statistics for TIPI extroversion, conscientiousness and emotional stability items

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependable, self-disciplined</td>
<td>104</td>
<td>5.74</td>
<td>.96</td>
<td>-.82</td>
<td>1.51</td>
<td>2.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Disorganised, careless (rev)</td>
<td>104</td>
<td>5.63</td>
<td>1.06</td>
<td>-.43</td>
<td>-.09</td>
<td>2.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Reserved, quiet (rev)</td>
<td>104</td>
<td>5.49</td>
<td>1.00</td>
<td>.06</td>
<td>-.81</td>
<td>3.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Calm, emotionally stable (rev)</td>
<td>104</td>
<td>5.47</td>
<td>0.93</td>
<td>-.06</td>
<td>-.53</td>
<td>3.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Extroverted, enthusiastic</td>
<td>104</td>
<td>5.34</td>
<td>1.38</td>
<td>-.92</td>
<td>.17</td>
<td>2.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Anxious, easily upset</td>
<td>104</td>
<td>3.69</td>
<td>1.70</td>
<td>.02</td>
<td>-1.01</td>
<td>1.00</td>
<td>7.00</td>
</tr>
</tbody>
</table>

Table 6.11 indicates that student-teachers were most likely to agree that they were dependable and self-disciplined (Mean = 5.74). Their mean response was equivalent to a value between 5 (Agree a little) and 6 (Agree moderately). They were least likely to agree that they were anxious or easily upset. (Mean = 3.69). For this item, their mean was equivalent to a response ranging between 3 (Disagree a little) and 4 (Neither agree nor disagree).
6.3.3 Items from the Pearlin-Schooler Mastery Scale (PSMS)

This section reports on the seven items measuring mastery, to which student-teachers’ responses ranged from 1 (Strongly Disagree) to 4 (Strongly Agree), as shown in Table 6.12.

**Table 6.12 Descriptive statistics for the seven PSMS mastery items**

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>What happens in future depends on me</td>
<td>104</td>
<td>3.38</td>
<td>.69</td>
<td>-1.04</td>
<td>1.29</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>I can do just about anything</td>
<td>104</td>
<td>3.28</td>
<td>.65</td>
<td>-.78</td>
<td>1.53</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Sometimes I feel I am being pushed around</td>
<td>104</td>
<td>2.06</td>
<td>.86</td>
<td>.36</td>
<td>-.62</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>I have little control over things that happen to me</td>
<td>104</td>
<td>2.00</td>
<td>.65</td>
<td>.21</td>
<td>.07</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>I often feel helpless dealing with life</td>
<td>104</td>
<td>2.00</td>
<td>.72</td>
<td>.31</td>
<td>-.17</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>There is no way I can control problems I have</td>
<td>104</td>
<td>1.99</td>
<td>.74</td>
<td>.59</td>
<td>.47</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>There is little I can do to change my life</td>
<td>104</td>
<td>1.80</td>
<td>.64</td>
<td>.44</td>
<td>.37</td>
<td>1.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Table 6.12 shows that student-teachers felt mastery over their futures, being mostly likely to agree that what happens in the future depended on them (Mean = 3.38), that is, their responses fell between 3 (Agree) and 4 (Strongly Agree). They were least likely to agree with the item stating they had little control over their future. Their responses to the item “There is little I can do to change my life” (Mean = 1.80) ranged between 1 (Strongly Disagree) and 4 (Strongly Agree).

6.3.4 Items from the 22 item Personal Coping Scale (PCS)

Student-teachers’ responded to the 22 items on the Personal Coping Strategies and Resources Scale (PCS) on a 7-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Table 6.13 reports descriptive statistics for this set of items.
Table 6.13  Descriptive statistics for the 22 items of the Personal Coping Scale (PCS)

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort and understanding from family</td>
<td>104</td>
<td>3.20</td>
<td>.688</td>
<td>-.468</td>
<td>-.089</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Do something about the situation</td>
<td>104</td>
<td>3.06</td>
<td>.518</td>
<td>.085</td>
<td>.790</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Look for something good in situation</td>
<td>104</td>
<td>3.05</td>
<td>.597</td>
<td>-.015</td>
<td>-.136</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Exercise regularly</td>
<td>104</td>
<td>2.96</td>
<td>1.004</td>
<td>-.509</td>
<td>-.912</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Do something to think about it less</td>
<td>104</td>
<td>2.92</td>
<td>.692</td>
<td>-.792</td>
<td>1.390</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Talk about worries to friends</td>
<td>104</td>
<td>2.80</td>
<td>.613</td>
<td>-.886</td>
<td>1.609</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>I remind myself to focus on the present</td>
<td>104</td>
<td>2.79</td>
<td>.664</td>
<td>-.957</td>
<td>1.462</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Get up and let out emotions</td>
<td>104</td>
<td>2.78</td>
<td>.763</td>
<td>-.404</td>
<td>.047</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Learn to live with it</td>
<td>104</td>
<td>2.78</td>
<td>.590</td>
<td>-.195</td>
<td>.181</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Tell myself to look differently at situation</td>
<td>104</td>
<td>2.74</td>
<td>.697</td>
<td>-1.003</td>
<td>1.137</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Criticize myself</td>
<td>104</td>
<td>2.67</td>
<td>.875</td>
<td>-.458</td>
<td>-.393</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Positive self-talk CBT rational cognition</td>
<td>104</td>
<td>2.66</td>
<td>.663</td>
<td>-.523</td>
<td>.340</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Work out a strategy to decrease stress</td>
<td>104</td>
<td>2.54</td>
<td>.787</td>
<td>-.434</td>
<td>-.298</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Reluctant to discuss with others</td>
<td>104</td>
<td>2.33</td>
<td>.781</td>
<td>.097</td>
<td>-.374</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>I focus on breathing and relax</td>
<td>104</td>
<td>2.21</td>
<td>.797</td>
<td>.187</td>
<td>-.426</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Often have more than 6 drinks at one time</td>
<td>104</td>
<td>2.08</td>
<td>1.086</td>
<td>.541</td>
<td>-1.043</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Practice yoga, relaxation</td>
<td>104</td>
<td>2.02</td>
<td>.914</td>
<td>.351</td>
<td>-.966</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Pretend it hasn’t really happened</td>
<td>104</td>
<td>1.99</td>
<td>.744</td>
<td>.448</td>
<td>.060</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Give up trying to deal with it</td>
<td>104</td>
<td>1.72</td>
<td>.645</td>
<td>.337</td>
<td>-.685</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>I refer to self-help books and CDs</td>
<td>104</td>
<td>1.70</td>
<td>.823</td>
<td>.926</td>
<td>.033</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Look up websites on ideas to cope</td>
<td>104</td>
<td>1.61</td>
<td>.769</td>
<td>1.206</td>
<td>1.070</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Drink two glasses of alcohol daily to cope</td>
<td>104</td>
<td>1.40</td>
<td>.631</td>
<td>1.552</td>
<td>2.316</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

As indicated in Table 6.13, most student-teachers were likely to seek comfort and understanding from family as their primary personal coping strategy (Mean = 3.20). Responses to that item fell mainly in the range between 3 (Agree) and 4 (Strongly Agree). Student-teachers were least likely to agree that they would drink two glasses of alcohol daily as a coping strategy (Mean = 1.40), with their responses to this item ranging mainly between 1 (Strongly Disagree) and 2 (Disagree).

6.3.5  Items from the Professional Demands Scale (PDS)

This section summarises student-teachers’ responses to six “Teaching Skills” and six “Your Teaching Career” items, which were incorporated into the Professional Demands Scale (PDS) constructed for the thesis. Responses to all three scales constructed for the thesis were given on a 7-point Likert scale ranging from 1 (Disagree strongly) to 7 (Agree strongly), as shown in Table 6.14.
Table 6.14  Descriptive statistics for the 12-item Professional Demands Scale (PDS)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend to achieve an S1 rating</td>
<td>104</td>
<td>6.14</td>
<td>1.12</td>
<td>-1.65</td>
<td>3.60</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Competent using technology</td>
<td>104</td>
<td>5.49</td>
<td>1.26</td>
<td>-.79</td>
<td>.55</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Comfortable receiving negative feedback from teacher</td>
<td>104</td>
<td>5.43</td>
<td>1.33</td>
<td>-1.21</td>
<td>1.99</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Internship main cause of stress</td>
<td>104</td>
<td>5.34</td>
<td>1.59</td>
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<td>.78</td>
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<td>7.00</td>
</tr>
<tr>
<td>Comfortable being evaluated by classroom teacher</td>
<td>104</td>
<td>5.33</td>
<td>1.34</td>
<td>-.94</td>
<td>.76</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Difficult to manage workload</td>
<td>104</td>
<td>4.95</td>
<td>1.36</td>
<td>-.67</td>
<td>.26</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Find difficulty managing demands and time</td>
<td>104</td>
<td>4.91</td>
<td>1.48</td>
<td>-.93</td>
<td>.55</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Difficult balancing professional and personal commitments</td>
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<td>4.89</td>
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<td>-.47</td>
<td>-.15</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Feel prepared to teach outside expertise</td>
<td>104</td>
<td>4.88</td>
<td>1.49</td>
<td>-.76</td>
<td>.24</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Not let on if stressed in case it harms chances</td>
<td>104</td>
<td>4.51</td>
<td>1.65</td>
<td>-.25</td>
<td>-.72</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Adversely challenged to manage new curriculum</td>
<td>104</td>
<td>4.33</td>
<td>1.46</td>
<td>-.30</td>
<td>-.49</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Difficulty managing student behaviour</td>
<td>104</td>
<td>3.47</td>
<td>1.53</td>
<td>.06</td>
<td>-1.13</td>
<td>1.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

As indicated in Table 6.14, in response to the items in the PDS, student-teachers were most likely to agree with the item devised to determine their Internship and teaching career aspirations (Mean = 6.14). Their responses to the “Intend to achieve an S1 rating” item ranged between 6 (Agree moderately) and 7 (Agree strongly). They were least likely to agree that they would have difficulty managing student behaviour (Mean = 3.47), with responses ranging between 3 (Disagree a little) to 4 (Neither agree nor disagree).

6.3.6  Items from the 12 item Professional Resources Scale (PRS)

Student-teachers indicated their level of agreement about a further 10 items, including their resources for coping with the professional demands associated with their Internship. Responses to this Professional Resources Scale (PRS) were made on a 7-point Likert scale ranging from disagree 1 (Disagree strongly) to 7 (Agree strongly), as presented in Table 6.15.
Table 6.15  Descriptive statistics for the 10-item Professional Resources Scale (PRS)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>N</th>
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<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share professional concerns with friends</td>
<td>104</td>
<td>5.62</td>
<td>1.23</td>
<td>-1.32</td>
<td>2.60</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Work harder and manage myself</td>
<td>104</td>
<td>5.11</td>
<td>1.34</td>
<td>-1.07</td>
<td>1.66</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Sleep poorly and expect it will be worse</td>
<td>104</td>
<td>4.36</td>
<td>1.75</td>
<td>-.53</td>
<td>-.75</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Appointment with doctor or other health professional</td>
<td>104</td>
<td>4.17</td>
<td>1.74</td>
<td>-.12</td>
<td>-.97</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Seek support from university supervisor</td>
<td>104</td>
<td>3.94</td>
<td>1.76</td>
<td>-.04</td>
<td>-.99</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Keep it to myself</td>
<td>104</td>
<td>3.68</td>
<td>1.74</td>
<td>-.06</td>
<td>-.95</td>
<td>1.00</td>
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</tr>
<tr>
<td>Not take it too seriously</td>
<td>104</td>
<td>3.40</td>
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<td>-.91</td>
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<td>7.00</td>
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<tr>
<td>Use stress management techniques already taught</td>
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<td>.71</td>
<td>-.30</td>
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<td>7.00</td>
</tr>
<tr>
<td>Not tell anyone as they would judge me</td>
<td>104</td>
<td>2.81</td>
<td>1.48</td>
<td>.51</td>
<td>-.21</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Do none of this as it would not help</td>
<td>104</td>
<td>2.59</td>
<td>1.44</td>
<td>.08</td>
<td>-1.53</td>
<td>1.00</td>
<td>6.00</td>
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</tbody>
</table>

The table has been arranged to indicate, in descending order, student-teachers’ level of agreement with each item. They were most likely to “Share their professional concerns with friends” (Mean = 5.62, SD=1.23), with responses ranging between 5 (Agree a little) and 6 (Agree moderately). They were least likely to agree that they would “Do none of the above, because it wouldn’t help” (Mean = 2.59, SD = 1.44).

6.4  Correlations between Scale and Composite scores

Scale scores were computed, after summing the item responses and dividing by the number of items to provide average scores, using the outcomes from the exploratory factor analysis (EFA), shown in Section 6.2 above. Table 6.16 gives the means and standard deviations for each of the standardized and composite scales. Pearson’s correlations between the scale scores are shown in Table 6.17.
Table 6.16  Descriptive statistics for the standardised and composite scales

<table>
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<tr>
<th>Statistics</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
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<td><strong>DASS</strong></td>
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<td><strong>Personality</strong></td>
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<tr>
<td>Mental strength</td>
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<td>5.62</td>
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<td>7.00</td>
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<tr>
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<tr>
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<td>CBT and mindfulness</td>
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<td>.54</td>
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<td>4.00</td>
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<td>5.83</td>
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<td><strong>PRS (resources)</strong></td>
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<td>7.00</td>
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</tbody>
</table>

As illustrated in Table 6.16, with the exception of DASS depression and anxiety scale scores, the level of standardized skew did not exceed 1.00 for any of the 16 scale scores. The positive skew for depression and anxiety suggests that the majority of student-teachers reported low depression and anxiety scores. Information about the significant bivariate correlations between personality, mastery, psychological distress, demands and coping scales is shown in Table 6.17.
### Table 6.17  Pearson’s correlations between the 16 scale scores

<table>
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<th>13.</th>
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<td>.25*</td>
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<td></td>
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<td>-.28**</td>
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<td>.26**</td>
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<td>-.02</td>
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<td>.11</td>
<td>.07</td>
<td>-.16</td>
<td>-.03</td>
<td>.11</td>
<td>-.09</td>
<td>.00</td>
<td>-.06</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note: N = 105 apart from minor variations due to missing cases.
*p < 0.05, **p < 0.01.
None of these scale scores in Table 6.17 correlate at 0.9 or above, but 32 of the correlations between the 16 scale scores are statistically significant. Almost all of the 32 significant correlations are as expected.

The meaning of the significance of the correlations between the 16 standardised and composite scales is now described.

6.4.1 Psychological distress

Relationships between the three psychological distress factors (Depression, Anxiety and Stress), and mastery, personality, coping, demands, barriers and professional resources were found to be as follows:

6.4.1.1 Depression

Depression was positively associated with anxiety, stress, disengagement and barriers to seeking help, and negatively associated with using alcohol and exercise.

6.4.1.2 Anxiety

Anxiety was positively associated with stress, mastery, emotional strength (personality factor), CBT and mindfulness, self-help, and disengagement (coping factors), ease with the demands of the Internship (professional demands), barriers to help-seeking and support (professional resources).

6.4.1.3 Stress

Stress was positively associated with lack of mastery, being disengaged, exercise and drinking alcohol and emotional release, as well as barriers to help-seeking.

6.4.2 Personality factors

Mental strength was positively associated with PDS Internship “ease” factors.
6.4.3 Mastery (PSMS)

Mastery was *positively* associated with disengagement, and barriers to help-seeking.

6.4.4 Personal Coping Scale (PCS)

Relationships between the five personal coping strategies and psychological distress factors, mastery, personality, Internship demands, barriers and professional resources were found to be as follows:

6.4.4.1 CBT and mindfulness

CBT and mindfulness was *positively* associated with self-help, being at ease about the demands of the Internship and seeking professional support, and *negatively* associated with difficulties about the demands of the Internship, and barriers to help-seeking.

6.4.4.2 Self-help

Self-help was *positively* associated with professional support.

6.4.4.3 Disengagement

Disengagement was *positively* associated with Internship difficulties and well-being barriers.

6.4.4.4 Emotional release

Emotional release was *negatively* associated with well-being barriers.

6.4.4.5 Drinking and exercise

Drinking and Exercise was *negatively* associated with depression and stress as mentioned above.
6.4.5 Professional Demands (Internship) Scale (PDS)

6.4.5.1 Difficulties

The PDS difficulties factor was positively associated with barriers to well-being, and negatively associated with being at ease about the demands of the Internship.

6.4.5.2 Ease

PDS Ease was positively associated with stress, and the personality characteristics of mental and emotional strength, and negatively associated with Internship difficulties and disengagement.

6.5 Differences Between Levels of Psychological Distress, and Coping Strategies Associated with the Internship

This section reports the extent to which student-teachers’ questionnaire responses changed between the baseline (Time 1), pre Internship (Time 2), and post Internship (Time 4). A number of analyses were conducted to address the seven specific research questions and associated hypotheses in this study. Because there was more than one outcome variable, repeated measures Multivariate Analysis of Variance (MANOVA) were performed in order to examine the effects of the Internship on each dimension of psychological distress. MANOVAs were performed for occasion (Time 1, Time 2 and Time 4), the three measures of psychological distress (depression, anxiety and stress), and the coping and resources scales to determine the significance of the Internship.

6.5.1 Depression, anxiety, and stress at baseline, pre and post Internship

A one-way repeated measures Multivariate Analysis of Variance (MANOVA) was conducted with occasion (Time 1, Time 2 and Time 4) as the single within-subjects independent variable and the three DASS measures of psychological distress (Depression, Anxiety and Stress) as the dependent variables, as shown in Figure 6.1.
Figure 6.1 Average scores for depression, anxiety, and stress across three occasions of Time

Results revealed a significant multivariate effect, $F(6, 144) = 2.61, p = .020$, Wilks’ Lambda = .82, partial eta squared = .098. Mauchly’s test of sphericity was significant for each of Depression ($p < .001$) and Anxiety ($p < .05$), indicating that the sphericity assumption underlying MANOVA was violated for these two dependent variables. In these two cases, the Greenhouse-Geisser correction was applied to the univariate tests. Mauchly’s test was not significant ($p > .05$) in the case of Stress, so sphericity was assumed for this dependent variable.

Univariate tests showed that the effect of occasion was significant for each of Depression $F(1.51, 55.8) = 4.49, p = .024$; partial eta squared = .11, and Stress, $F(2,74) = 5.77, p = .005$, partial eta squared = .14, but not for Anxiety $F(1.70, 62.8) = 1.77, p = .18$, partial eta squared = .05.
Details of pairwise comparisons for Depression and Stress, but not Anxiety, were therefore investigated. These analyses are reported in Section 6.6, where the hypotheses are considered.

6.5.2 Personal coping strategies at baseline, pre and post Internship

A one-way repeated measures MANOVA was conducted with occasion (Time 1, Time 2 and Time 4) as the single independent variable and the five coping (PCS) measures (CBT/Mindfulness, Self-help, Disengagement, Ex/Drinking, Emotional Release) as the dependent variables, as shown in the Figure 6.2.

![Figure 6.2](image-url)

**Figure 6.2** Average scores for five PCS coping scale scores across three occasions of Time

Results revealed a significant multivariate effect, $F(10, 28) = 4.51, p = .001$, Wilks’ Lambda = .38, partial eta squared = .62. Mauchly’s test of sphericity was
significant for Self-Help \( (p < .05) \), indicating that the sphericity assumption was violated, and so the Greenhouse-Geisser correction was applied to the univariate test. Mauchly’s test was not significant \( (p > .05) \) in the case of CBT/mindfulness, Disengagement, Ex/Alcohol or Emotional Release, so sphericity was assumed for these dependent variables.

Univariate tests showed that the effect of occasion was significant for each of CBT/mindfulness, \( F(1.91, 2.35) = 16.26, p = .000, \) partial eta squared = .31, Self-Help \( F(1.61, 2.93) = 10.57, p = .000, \) partial eta squared = .22, Disengagement, \( F(1.98, 3.49) = 15.58, p = .000, \) partial eta squared = .29, and Ex/Alcohol, \( F(1.70, 26.14) = 1.77, p = .000, \) partial eta squared = .21, but not for Emotional Release, \( F(1.80, .24) = 1.12, p = .33, \) partial eta squared = .03.

Pairwise comparisons for CBT/Mindfulness, Self-help, Disengagement, Ex/Drinking, but not Emotional Release, were therefore investigated. These analyses showed significant differences between Time 2 and Time 4 CBT/Mindfulness, Self-help, Disengagement, Ex/Drinking \( (p < .05) \). Comparisons involving Time 1 CBT/Mindfulness, Self-help, Disengagement, Ex/Drinking, and Emotional Release were not significant \( (p < .05) \).

6.5.3 Professional Demands at baseline, pre and post Internship

Results for a repeated measures MANOVA, conducted with occasion (Time 1, Time 2 and Time 4) as the single independent variable, and the two PDS factors (Ease and Difficulties) as the dependent variables, revealed no significant multivariate effect for time, \( F(1,88.00) = 3.55, p = .461, \) Wilks’ Lambda = .61, partial eta squared = .43.

6.5.4 Professional resources at baseline, pre and post Internship

A one-way repeated measures MANOVA was conducted with occasion (Time 1, Time 2 and Time 4) as the single independent variable and the three PRS factors
(Professional Support, Barriers and Relaxation) as the dependent variables, as shown in the Figure 6.3.

![Figure 6.3](image_url)

**Figure 6.3** Average scores and standard error for three professional resource factors across three occasions of Time

Results revealed a significant multivariate effect, $F (6, 30) = 19.11$, $p = .000$, Wilks’ Lambda = .21, partial eta squared = .79. Mauchly’s test of sphericity was significant for Relaxation ($p < .05$), indicating that the sphericity assumption was violated and so the Greenhouse-Geisser correction was applied to this univariate test. Mauchly’s test was not significant ($p > .05$) in the case of Barriers or Professional Support, so sphericity was assumed for these two dependent variables.

Univariate tests showed that the effect of occasion was significant for each of Relaxation $F (1.63, 21.87) = 16.39$, $p = .000$, partial eta squared = .32 and Professional Support $F (1.63, 21.87) = 16.39$, $p = .000$, partial eta squared = .32.
Support $F(1.84, 22.85) = 23.17, p = .000$, partial eta squared = .40, but not for Barriers $F(1.95, 2.97) = 1.95, p = .151$ partial eta squared = .05.

Mean differences, shown in Figure 6.3, indicate a decline in use of Professional Support from Time 1 to Time 2 and Time 4. Use of Relaxation strategies declined between Time 1 and Time 2, but increased between Time 2 and Time 4. Barriers to seeking help increased between Time 1 and Time 2, but decreased between Time 2 and Time 4.

These relationships, and the effect of attrition on post Internship (Time 4) scores, are explored further in the qualitative data presented in Chapter 7.

6.6 Hypotheses linked to Research Questions

This section presents quantitative data relevant to the specific research questions. Each question and associated hypothesis is addressed sequentially.

6.6.1 Hypothesis 1: Significance of depression, anxiety and stress

Research Question 1 was “What is the extent of psychological distress experienced by contemporary final year Australian primary school student-teachers?” It was hypothesized that the extent of Depression, Anxiety and Stress (dimensions of psychological distress), measured by the DASS, would be greater among primary school student-teachers when approaching their Internship in their final year of an undergraduate teaching degree than at the beginning of the year, and that it would be greater among student-teachers than in the general population.

Descriptive statistics, presented in Tables 6.8, 6.9 and 6.10 supported the prediction that psychological distress, reported as Depression, Anxiety and Stress, was present among some student-teachers. Ranges of scores for Depression, Anxiety and Stress provided by Lovibond and Lovibond (1995) for researchers of psychological
distress are presented as mild, moderate, severe or extremely severe. Student-teachers’
scores which fell within each of these range is presented in Table 6.18.

Table 6.18  Levels of Psychological Distress among Student-Teachers at baseline  
(Time 1)

<table>
<thead>
<tr>
<th>DASS categories</th>
<th>Depression Scores</th>
<th>%</th>
<th>Anxiety Scores</th>
<th>%</th>
<th>Stress Scores</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0-9</td>
<td>87.6</td>
<td>0-7</td>
<td>85.7</td>
<td>0-14</td>
<td>88.6</td>
</tr>
<tr>
<td>Mild</td>
<td>10-12</td>
<td>7.6</td>
<td>8-9</td>
<td>5.7</td>
<td>15-18</td>
<td>6.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>14-20</td>
<td>4.8</td>
<td>10-14</td>
<td>4.8</td>
<td>19-25</td>
<td>4.8</td>
</tr>
<tr>
<td>Severe</td>
<td>21-27</td>
<td>0</td>
<td>15-19</td>
<td>2.8</td>
<td>26-33</td>
<td>0</td>
</tr>
<tr>
<td>Extreme</td>
<td>28+</td>
<td>0</td>
<td>20+</td>
<td>1.0</td>
<td>34+</td>
<td>0</td>
</tr>
</tbody>
</table>

As shown in Table 6.18, most student-teachers’ levels of Depression (0-9),
Anxiety (0-7) and Stress (0-14) at baseline (Time 1) was within the normal range.
However, there were student-teachers who were mildly and moderately Depressed,
Anxious and Stressed at that time, and others who were moderately Depressed, Anxious 
and Stressed. None was severely Depressed or Stressed, but 2.8% were severely 
Anxious, and one student-teacher was extremely Anxious.

The levels of mild, moderate, severe or extremely severe levels of Depression, 
Anxiety and Stress at Time 1 (baseline) increased at Time 2 (pre Internship). These 
percentages are shown in Table 6.19.

Table 6.19  Percentages of Student-Teachers who fell into the normal, mild, moderate 
and severe ranges for each of the DASS subscales at Time 1 and Time 2

<table>
<thead>
<tr>
<th>DASS categories</th>
<th>Time 1 Depression</th>
<th>Time 2 Depression</th>
<th>Time 1 Anxiety</th>
<th>Time 2 Anxiety</th>
<th>Time 1 Stress</th>
<th>Time 2 Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>87.6</td>
<td>90.4</td>
<td>85.7</td>
<td>80.9</td>
<td>88.6</td>
<td>88.2</td>
</tr>
<tr>
<td>Mild</td>
<td>7.6</td>
<td>3.2</td>
<td>5.7</td>
<td>7.4</td>
<td>6.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>4.8</td>
<td>5.3</td>
<td>4.8</td>
<td>3.5</td>
<td>4.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Severe</td>
<td>n/a</td>
<td>1.0</td>
<td>2.8</td>
<td>1.0</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The percent of student-teachers who were mildly Depressed decreased between 
Time 1 (7.6%) and Time 2 (3.2%), but the percent who were moderately Depressed
increased. Mild Anxiety increased, but moderate and severe Anxiety decreased between Time 1 and Time 2. The percent of student-teachers who were mildly Stressed decreased but there was an increase in moderate levels of Stress between Time 1 and Time 2. Overall differences between Time 1 and Time 2 were relatively small. As only 33% of student-teachers completed Q3, their levels at Time 4 were not calculated.

When compared with the norms provided for general population, student-teachers’ Depression, Anxiety and Stress at baseline (Time 1) was less severe. This is shown in Table 6.20.

Table 6.20  DASS Levels for Student-Teachers and the General Population at Time 1

<table>
<thead>
<tr>
<th>DASS severity</th>
<th>%ile (Gen Pop)</th>
<th>Student-Teachers Depression</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0-78</td>
<td>87.6</td>
<td>85.7</td>
<td>88.6</td>
</tr>
<tr>
<td>Mild</td>
<td>78-87</td>
<td>7.6</td>
<td>5.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>87-95</td>
<td>4.8</td>
<td>4.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Severe</td>
<td>95-98</td>
<td>0</td>
<td>2.8</td>
<td>0</td>
</tr>
<tr>
<td>Extreme</td>
<td>98-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

As illustrated in Table 6.20, at baseline (Time 1) most student-teachers’ psychological distress was within the normal ranges, with smaller numbers falling into the “moderate” category. The student-teachers’ (2.8%), and general population’s (3%) results in the severe Anxiety range were similar.

6.6.2 Hypothesis 2: Personality characteristics associated with psychological distress

Research Question 2 was “Are primary school student-teachers’ personality characteristics associated with the psychological distress they experience?” It was hypothesized that some personality characteristics would be associated with student-
teachers’ psychological distress. In particular, it was predicted that higher levels of psychological distress would be positively correlated with conscientiousness, and that higher levels of psychological distress would be negatively associated with emotional stability, extroversion and mastery.

Descriptive statistics for personality items, shown in Table 6.11 revealed that at baseline (Time 1), student-teachers agreed that they were conscientious, extroverted and emotionally stable. However, as reported in the exploratory analyses in 6.3.1, reliability values for the paired conscientiousness and emotional stability variables were negative so new personality measures were constructed following factor analyses. Therefore the predictions about specific personality characteristics could not be explored, so the question was answered with relation to the two new personality dimensions labelled emotional and mental strength.

Bivariate correlations presented in Table 6.17 examine the relationship between psychological distress variables and the new personality dimensions. The result was that no association was found between mental strength and any of Depression, Anxiety or Stress. The only one significant positive association identified ($r = .28$, $n=102$, $p < 0.01$) was between Anxiety and the second personality factor, entitled emotional strength.

Descriptive statistics for mastery items, shown in Table 6.12, revealed that at baseline (Time 1), student-teachers agreed that they had mastery over their lives. Factor analyses of the revised mastery scale was conducted. Table 6.17 shows that lack of Mastery correlated significantly, ($p < .01$), with Depression ($r = .39$) Anxiety ($r = .37$) and Stress ($r = .36$).

6.6.3 Hypothesis 3: Personal demands experienced by student-teachers

Research Question 3 was “What personal demands do primary school student-teachers experience?” It was hypothesized that student-teachers’ personal demands
would impact on their psychological distress. Bivariate correlations presented in Table 6.21 examine the relationship between psychological distress variables, being female (Gender), Age range, Education (Highest Level, GPA, Where Completed and OP) and the Personal Demands associated with Relationships, Child-Rearing Responsibilities, Work and Financial Responsibilities. These demands are further explored from the qualitative data provided in the questionnaires in Chapter 7.

Significant correlations shown in Table 6.21 and the direction of the associations are now described in detail:

6.6.3.1 Age

Age in years was positively associated with GPA in third year, living with a partner, being responsible for raising children, and paying university fees oneself.

Age in years was negatively associated with living with parents, working part-time while studying, and being single.

6.6.3.2 Education

GPA in 3rd year was positively associated with having responsibilities for raising children, and also being a sole parent.

Year 12 OP was positively associated with living alone and paying fees upfront and negatively associated with paying university fees via tax return.

6.6.3.3 Relationships

Living with parents was positively associated with being single, and negatively associated with living with a partner, living alone and child-rearing responsibilities.

Living with partner was positively associated with being responsible for raising children, and negatively associated with living alone or being single.

Living alone independently was positively associated with being single.
Table 6.21  Pearson’s correlation matrix for correlations between personal demands and psychological distress at Time 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Ed Level</td>
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<td>0.13</td>
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<td></td>
<td></td>
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<tr>
<td>GPA</td>
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<td>0.36**</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yr 12 OP</td>
<td>0.17</td>
<td>-0.19</td>
<td>-0.07</td>
<td>0.2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs work</td>
<td>0.06</td>
<td>0.10</td>
<td>-0.00</td>
<td>-0.02</td>
<td>0.08</td>
<td>1</td>
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<td></td>
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<tr>
<td>Live with parents</td>
<td>0.11</td>
<td>-0.34**</td>
<td>-0.10</td>
<td>-0.17</td>
<td>-0.02</td>
<td>-0.16</td>
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<tr>
<td>Live with partner</td>
<td>-0.02</td>
<td>0.37**</td>
<td>0.12</td>
<td>0.16</td>
<td>-0.18</td>
<td>0.17</td>
<td>-0.65**</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Live alone</td>
<td>-0.11</td>
<td>-0.03</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.23</td>
<td>-0.00</td>
<td>-0.45**</td>
<td>-0.39**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raise children</td>
<td>-0.01</td>
<td>0.83**</td>
<td>0.05</td>
<td>0.32**</td>
<td>0.04</td>
<td>0.08</td>
<td>-0.28**</td>
<td>0.37**</td>
<td>-0.09</td>
<td>1</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Child ages</td>
<td>0.15</td>
<td>0.29</td>
<td>0.45</td>
<td>0.29</td>
<td>0.54</td>
<td>-0.08</td>
<td>0.29</td>
<td>-0.17</td>
<td>-0.07</td>
<td>0.07</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Self pay fees upfront</td>
<td>0.04</td>
<td>0.23</td>
<td>0.15</td>
<td>0.12</td>
<td>0.27**</td>
<td>-0.06</td>
<td>-0.04</td>
<td>0.07</td>
<td>-0.02</td>
<td>0.18</td>
<td>0.30</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent pay upfront</td>
<td>-0.13</td>
<td>-0.11</td>
<td>-0.05</td>
<td>-0.14</td>
<td>0.03</td>
<td>-0.04</td>
<td>0.00</td>
<td>-0.04</td>
<td>0.05</td>
<td>-0.12</td>
<td>.09</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self pay in tax</td>
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<td>-0.08</td>
<td>-0.01</td>
<td>-0.24</td>
<td>0.08</td>
<td>0.04</td>
<td>-0.03</td>
<td>-0.01</td>
<td>-0.07</td>
<td>-0.30</td>
<td>-0.75**</td>
<td>-0.59**</td>
<td>1</td>
</tr>
<tr>
<td>P/T employed</td>
<td>-0.01</td>
<td>-0.31**</td>
<td>-0.12</td>
<td>-0.17</td>
<td>-0.15</td>
<td>-0.49**</td>
<td>0.18</td>
<td>-0.18</td>
<td>-0.01</td>
<td>-0.39**</td>
<td>0.376</td>
<td>-0.04</td>
<td>-0.04</td>
<td>1</td>
</tr>
<tr>
<td>F/T employed</td>
<td>0.04</td>
<td>0.18</td>
<td>0.13</td>
<td>-0.06</td>
<td>0.02</td>
<td>0.38**</td>
<td>-0.05</td>
<td>0.07</td>
<td>-0.03</td>
<td>0.12</td>
<td>0.31</td>
<td>0.18</td>
<td>0.09</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: a) gender M = 1, F = 2; b) ages 20-25 = 1, 26-30 = 2, 31-35 = 3, 36-40 = 4, 41-45 = 5, 46-50 = 6; c) highest level of education Year 10 = 1, Year 12 = 2, other tertiary = 3; d) GPA at end of 3rd year 7 = 1, 6 = 2, 5 = 3, 4 = 4, 3 = 5; e) Year 12 OP 1-3 = 1, 4-7 = 2, 8-12 = 3, 13-18 = 4, 19-23 = 5 = 6; f) living with parents Yes = 1, No = 2, with partner, Yes = 1, No = 2, alone, Yes = 1, No = 2; children’s ages 1-5 = 1, 6-12 = 2, >13 = 3; g) hours worked 1-5 = 1, 6-10 = 2, 11-15 = 3,16-20 = 4, 21-25 = 6, >26 = 7

* p<.05. ** p < .01
6.6.3.4 Child-rearing responsibilities

Responsibility for raising children was negatively associated with being a sole parent (Single), and in part-time employment.

6.6.3.5 Work and financial responsibilities

Hours of paid employment were positively associated with full-time employment while studying, and negatively associated with part-time employment while studying. Full-time employment was negatively associated with the student-teacher paying study fees as part of their tax, and undertaking part-time employment.

Paying university fees upfront was positively associated with the ages of the children and negatively associated with the student-teacher paying study fees as part of tax. Payment of university fees upfront by the student-teachers parent(s) was negatively associated with the student-teacher paying study fees through their taxes.

6.6.3.6 Gender

There were no significant associations between gender and personal demands.

6.6.4 Personal demands associated with student-teachers’ depression, anxiety and stress

Bivariate correlations between Personal Demands, including financial responsibilities, and Depression, Anxiety and Stress were also undertaken, as shown in Table 6.22.
Table 6.22  Pearson’s correlations between personal demands and depression, anxiety and stress at baseline (Time 1)

<table>
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<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
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<tr>
<td>1. Females</td>
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<td></td>
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<td></td>
<td></td>
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</tr>
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<tr>
<td>3. Live with parents</td>
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<td>.61**</td>
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<td>4. Live with partner</td>
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<td>-.74**</td>
<td>-.65**</td>
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<td>-.45**</td>
<td>-.39**</td>
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<td>6. Raise children</td>
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<td>-.35**</td>
<td>-.28**</td>
<td>-.37**</td>
<td>-.09</td>
<td>1</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>7. Sole parent</td>
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<td>.08</td>
<td>-.13</td>
<td>.05</td>
<td>.39**</td>
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<td>8. Fees paid upfront</td>
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<td>-.05</td>
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<td>9. Fees paid by parent</td>
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<td>.05</td>
<td>-.12</td>
<td>-.05</td>
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</tr>
<tr>
<td>10. Fees paid by tax</td>
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<td>.11</td>
<td>.04</td>
<td>-.03</td>
<td>-.01</td>
<td>-.07</td>
<td>.08</td>
<td>-.75**</td>
<td>-.59**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11. Hrs paid employ</td>
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<td>-.09</td>
<td>-.16</td>
<td>.16</td>
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<td>.06</td>
<td>.19</td>
<td>.07</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Depression</td>
<td>.28**</td>
<td>-.09</td>
<td>-.05</td>
<td>.08</td>
<td>-.03</td>
<td>.12</td>
<td>.01</td>
<td>.34**</td>
<td>-.09</td>
<td>-.21*</td>
<td>.07</td>
<td>1</td>
<td></td>
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</tr>
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<td>13. Anxiety</td>
<td>.14</td>
<td>.20*</td>
<td>.10</td>
<td>-.07</td>
<td>-.04</td>
<td>-.03</td>
<td>-.00</td>
<td>.17</td>
<td>.11</td>
<td>-.20*</td>
<td>-.00</td>
<td>.48**</td>
<td>1</td>
<td></td>
</tr>
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<td>14. Stress</td>
<td>.27**</td>
<td>.04</td>
<td>.01</td>
<td>.06</td>
<td>-.09</td>
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<td>-.00</td>
<td>-.17</td>
<td>.11</td>
<td>.70**</td>
<td>.67**</td>
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</tbody>
</table>

Note. N = 105 apart from minor variations due to missing cases.

\( p < .05; ** p < .01 \)
As indicated in Table 6.22, six out of 11 indicators of Personal Demands, together with gender ($r = .28, n = 102, p < .01$), being single ($r = .21, n = 105, p < .05$), and paying university fees via tax ($r = -.21, n = 105, p < .05$), correlated with one of the three DASS indices of psychological distress. Gender, being single and paying fees upfront (before university classes began0, were positively associated with depression, anxiety and stress, whereas paying university fees via tax was negatively associated with depression and anxiety. These associations are shown in detail as follows:

6.6.4.1 Depression

Depression was positively associated with being female and paying university fees upfront and negatively associated with paying university fees upon employment through the taxation system.

6.6.4.2 Anxiety

Anxiety was positively associated with being single and negatively associated with paying university fees upon employment through the taxation system.

6.6.4.3 Stress

Stress was positively associated with being female.

6.6.5 Hypothesis 4: Professional demands associated with the Internship

Research Question 4 was “What professional demands do primary school student-teachers associate with their Internship?” It was hypothesized that the professional demands of the Internship would be associated with psychological distress, as demonstrated by measures of student-teachers’ levels of psychological distress being higher pre Internship (Time 2) [and post Internship (Time 4)], than baseline (Time 1). The Professional Demands of the Internship, as indicated in 6.6.3, were reduced to two factors, namely Ease and Difficulties, and it was expected that “Ease” would be lower,
and “Difficulties” higher at Time 2, prior to the student-teachers’ Internship, and at Time 4, once the Internship was over.

Bivariate correlations for the 16 scale scores including Depression, Anxiety and Stress and the Professional Internship Demands, reduced to two factors, namely Ease and Difficulties were also undertaken, as shown in Table 6.17. The only significant correlation at baseline (Time 1) was between Ease and Anxiety.

To verify that the Internship impacts on student-teachers’ levels of psychological distress, the relationship between levels of psychological distress and the Internship was explored by following up the previously reported MANOVA (see Figure 6.1) with pairwise comparisons between the distress measures obtained at different times. The mean difference scores, computed for every combination of time with each of the three components of psychological distress, are shown in Table 6.23.

Table 6.23  Descriptive statistics for the Paired Samples test of nine DASS difference scores

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T4</th>
<th>T1 vs T2 Mean Diff</th>
<th>T2 vs T4 Mean Diff</th>
<th>T1 vs T4 Mean Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mean</td>
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<td>.68</td>
<td>.35</td>
<td>.12</td>
<td>.39</td>
<td>.21</td>
</tr>
<tr>
<td>SD</td>
<td>.57</td>
<td>.71</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>.50</td>
<td>.60</td>
<td>.38</td>
<td>.11</td>
<td>.46</td>
<td>.22</td>
</tr>
<tr>
<td>SD</td>
<td>.56</td>
<td>.69</td>
<td>.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stress</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.09</td>
<td>1.37</td>
<td>.91</td>
<td>.28</td>
<td>.08</td>
<td>.17</td>
</tr>
<tr>
<td>SD</td>
<td>.69</td>
<td>.81</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = p < .05, ** = p < .01

As shown in Table 6.23, the significance of the difference scores were computed for every combination of time with each of the three components of psychological distress from baseline (T1) to pre-Internship (T2) and post Internship (Time 4). The
difference between means were elevated between Time 1 and Time 2 for each of Depression (M = .57; M = .68, Anxiety (M = .50 M = .60) and Stress (M = 1.09; M = 1.37). All three Means then decreased between Time 2 and Time 4.

However, there were only two significant differences. These were the differences between student-teachers’ mean levels of Depression at baseline (T1) and post Internship (T4), (M = .21, \( p < .01 \)), and the differences between their Stress from pre Internship (T2) to post Internship (T4) (M = .46, \( p < .01 \)). No comparisons involving Anxiety were significant (\( p < .05 \)).

6.6.6 Hypothesis 5: Coping strategies and resources used by student-teachers

Research Question 5 was “What coping strategies and resources do individual primary school student-teachers use?” It was hypothesized that student-teachers would use a variety of strategies to manage their psychological distress, including a combination of self-help, mindfulness-based and cognitive behaviour strategies, emotional support from family, exercise, and drinking alcohol.

It was also hypothesized that they would use professional resources and peer support to manage the stresses associated with their Internship. As shown earlier in Table 6.9, student teachers were most likely to seek support from family as their coping strategy, and least likely to drink more than two glasses of alcohol daily. To cope with their Internship stress, they were most also likely to share their professional concerns with friends, and least likely to do nothing at all in the belief that nothing could help them.

Following a factor analysis, the 22-item coping scale (PCS) was reduced to five factors, and the resources scale (PRS) was reduced to three factors. Correlations between Depression, Anxiety and Stress and these factors were reported in Table 6.17. These associations are described below:
6.6.6.1 Depression

Depression was positively associated with Disengagement \((p < .01)\), and negatively associated with Drinking Alcohol and Exercise \((p < .05)\).

6.6.6.2 Anxiety

Anxiety was positively associated with the coping strategies of CBT/mindfulness \((p < .05)\), Self Help \((p < .01)\), and Disengagement \((p < .05)\), and the resources of Professional Support \((p < 0.05)\) as well as Barriers to seeking help \((p < .01)\).

6.6.6.3 Stress

Stress was positively associated with the coping strategy of Emotional Release \((p < .01)\) and negatively associated with Drinking Alcohol and Exercise \((p < .05)\).

6.6.7 Hypothesis 6: Barriers preclude psychologically distressed student-teachers from seeking help

Research Question 6 was “What barriers preclude final year primary school student-teachers from seeking help for their psychological distress?” It was hypothesized that some student-teachers would not want to admit being psychologically distressed. This prediction was based on an assumption that some student-teachers may be concerned about acknowledging any mental health issues for fear that to do so would adversely impact on their chances of being offered a teaching position following their Internship.

As shown in Table 6.15, student-teachers agreed that they were likely to try and work harder to try and manage their stresses themselves \((\text{Mean} = 5.11; \text{SD} = 1.34)\). There was also agreement, when asked at Time 1, that they would make an appointment with a doctor or health professional if stressed during their Internship \((\text{Mean} = 4.17; \text{SD} \ldots)\).
but student-teachers were less likely to agree (Mean = 2.59; SD = 1.44) that they would not use any of the resources suggested as “none of this would help”.

Following a factor analysis, the 10-item Professional Resources Scale (PCS) was reduced to three factors. There were significant ($p < .01$) positive association between each of Depression, Anxiety and Stress and Barriers (which included sleeping poorly, keeping worries to oneself and fear of being judged by others), as reported in Table 6.17. This result offers limited quantitative support to the hypothesis that there were some barriers which precluded some student-teachers from seeking support. This hypothesis is further tested through exploration of the qualitative data provided on questionnaires, as reported in Chapter 7.

6.6.8 Hypothesis 7: Relationships exist between the Internship, personal and professional coping strategies and psychological distress

Research Question 7 was “What relationships exist between the demands of the Internship, student-teacher’s personal and professional coping strategies and/or psychological distress?” It was hypothesized that there would be relationships between student-teachers’ psychological distress, the Internship and their coping strategies.

In order to examine construct validity of the dependent variables, namely the re-categorised personality factors (labelled Mental and Emotional Strength), Mastery, Professional Demands of the Internship (labelled Ease and Difficulties), and student-teachers’ Coping Strategies (labelled CBT/mindfulness, Self-help, Disengagement, Exercise & Alcohol, and Emotional Release), and Professional Resources (labelled Relaxation and Professional Support) and Barriers, two sets of analyses were conducted. First correlations (Pearson $r$) between the dependent variables and the three occasions when Depression, Anxiety and Stress were measured (T1-T2, T2-T4, and T1-T4) were calculated in order to summarise the significant correlations.
Second, hierarchical regression analyses were conducted on the difference scores for each dependent variable (Depression, Anxiety and Stress) for each occasion (T1-T2, T2-T4, and T1-T4), as identified from the correlations. It was expected that the 13 scale-based measures, which included two personality factors (Mental and Emotional Strength), Mastery, two professional demands factors (Ease and Difficulties), five coping strategies, two professional resources (Professional Support and Relaxation) and Barriers to help-seeking would predict adjustment to the professional Internship demands over time, across the three domains (Depression, Anxiety and Stress).

Correlations between each of the 13-measure dependent variables and the three DASS independent variables identified the predictor variables that significantly correlated with depression, anxiety or stress on each of the three occasions. Only these variables, as described, were entered into the equations.

6.6.8.1 Regression Analyses between Time 1 (baseline) and Time 2 (pre Internship)

Results summarising hierarchical regression analyses to predict changes in student-teachers’ Depression, Anxiety and Stress between Time 1 (baseline) and Time 2 (pre Internship) are shown in Table 6.24.

6.6.8.1.1 Depression

The predictor variable Relaxation, significantly correlated with Depression at Time 1. This resource for coping with the professional Internship demands, when entered at Step 1, explained 6% of the variance in Depression, between Time 1 and Time 2. Emotional Release and Disengagement coping strategies, which significantly correlated with Depression at Time 2, were added to the equation at Step 2. These variables explained a further 16% of the variance in Depression, \( F(3, 87) = 5.36 \ p < .01 \). Together, the Relaxation resource variable and the two coping strategies, Emotional Release and Disengagement, explained 13 % of the variance in Depression,
R squared change =.13, $F$ change $(2, 87) = 5.209, p < .01$. However, in the final model, only two measures were statistically significant, with the Relaxation subscale recording a higher beta value ($\beta = .21$, $p < .05$) than the Disengagement scale ($\beta = -.26$, $p < .05$).

6.6.8.1.2 Anxiety

Internship Ease, lack of Mastery, the CBT/mindfulness coping strategy, Professional Support Resources and Relaxation significantly correlated with Anxiety at Time 1. These variables, entered at Step 1, explained 20% of the variance in Anxiety, between Time 1 and Time 2. Disengagement and Internship Ease significantly correlated with Anxiety at Time 2. Adding these Time 2 variables to the equation at Step 2 added no further variance in Anxiety. In the final model only two coping measures were statistically significant, with the Relaxation subscale recording a higher beta value ($\beta = -.264$, $p < .05$) than the Ease sub-scale ($\beta = .243$, $p < .05$).

6.6.8.1.3 Stress

Mastery, CBT/mindfulness coping strategy and Relaxation significantly correlated with Stress at Time 1. These variables, entered at Step 1, explained 10% of the variance in Stress, between Time 1 and Time 2. Disengagement and Internship Difficulties significantly correlated with Stress at Time 2. Adding these Time 2 variables to the equation at Step 2 added a further 17% variance in Stress, $F (5,81) = 3.23, p < .01$. The Step 2 measures explained an additional 17% of the variance in Stress at Time 2, R squared change = .17, $F$ change $(2,81) = 3.20, p < .05$. In the final model the CBT/mindfulness coping, Mastery and Internship Difficulties subscales were statistically significant, with the Difficulties scale recording a higher beta value ($\beta = -.226$, $p < .05$) than either the Mastery ($\beta = -.219$, $p < .05$) or CBT/mindfulness coping subscales ($\beta = -.212$, $p < .05$).
Table 6.24  Significant hierarchical regression outcomes for psychological distress difference scores between Time 1 (baseline) and Time 2 (pre Internship)

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Step</th>
<th>Independent Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
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<tbody>
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<td>.03</td>
<td>-.26</td>
<td>-2.59</td>
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<td>.24</td>
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<td>.07</td>
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<td>.02</td>
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<td>.04</td>
<td>-.11</td>
<td>-1.09</td>
<td>ns</td>
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<td>.26</td>
<td>2.48</td>
<td>*</td>
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<td>CBT/mindfulness</td>
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<td>.05</td>
<td>.26</td>
<td>2.43</td>
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<td>.04</td>
<td>.12</td>
<td>1.16</td>
<td>ns</td>
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<td>.05</td>
<td>-.13</td>
<td>-1.19</td>
<td>ns</td>
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<td>-2.21</td>
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</tr>
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</table>

*p < 0.05; **p < 0.01, ns = not significant

Specific regression analyses uncovered the relative contribution of the coping strategies in predicting student-teachers’ psychological distress. An increase in Depression was predicted by Disengagement and a decrease in Depression was predicted by Relaxation. A decrease in Anxiety was predicted by feeling at Ease about the demands of the Internship, and coping using Relaxation. An increase in Stress was predicted by the Difficulties associated with the demands of the Internship and a decrease was predicted by Mastery and the CBT/mindfulness coping strategy.

6.6.8.2 Regression analyses between Time 1 (baseline) and Time 4 (post Internship)

A second set of hierarchical regression analyses was undertaken for the same 13 scale-based measures to obtain the predicted changes in Depression, Anxiety and Stress (psychological distress) from baseline (Time 1) to post Internship (Time 4). These combined results are shown in Table 6.25.
6.6.8.2.1 Depression

The predictor variable Relaxation, a resource for coping with the professional Internship demands, significantly correlated with Depression at Time 1. When entered at Step 1, the Relaxation coping resource explained 8% of the variance in Depression, between Time 1 and Time 4. The coping strategy of Disengagement and Barriers to help-seeking both correlated significantly with Depression at Time 4, therefore these variables were added to the equation at Step 2. However, neither the Disengagement coping strategy nor the Barriers to help-seeking variable added at Step 2 explained further variance in Depression, $R^2$ change = .008, $F$ change $(2, 33) = .598, p = .264$. In the final model no coping or other measures were statistically significant.

6.6.8.2.2 Anxiety

The predictor variables Mastery, Internship Ease, and the CBT/mindfulness and Alcohol and Exercise coping strategies significantly correlated with Anxiety at Time 1. These predictor variables were entered into the equation at Step 1. Mastery, Internship Ease, and the CBT/mindfulness and Alcohol and Exercise variables explained 30% of the variance in Anxiety, between Time 1 and Time 4.

The coping strategy of Disengagement and Barriers to help-seeking, significantly correlated with Anxiety at Time 4, therefore these variables were added to the equation at Step 2. After entering the Time 4 Disengagement coping strategy and Barriers variables to the equation at Step 2, the total variance in Anxiety was 37.8% variance $F (6, 31) = 3.514, p < .05$. These two Step 2 strategies explained an additional 8% of the variance in Anxiety, $R^2$ change = .8, $F$ change $(2, 31) = 1.955, p = .16$. In the final model only two variables were statistically significant, with the Mastery subscale recording a higher beta value ($\beta = .36, p < .05$) than the Ease scale ($\beta = .30, p < .05$).
6.6.8.2.3  Stress

Two coping strategies, CBT/mindfulness and Alcohol and Exercise, significantly correlated with Stress at Time 1. These two predictor variables were entered at Step 1. They explained 5% of the variance in Stress, between Time 1 and Time 4. The coping strategy of Disengagement, the Relaxation variable, and Barriers to help-seeking significantly correlated with Stress at Time 4. Thus, these three variables were added to the equation at Step 2. After adding them to the equation at Step 2, the total variance in Stress was 22%, $F(5, 31) = 1.778, p = .15$. The Step 2 measures explained an additional 22% of the variance in Stress, $R^2$ change = .22, $F_{squared}$ change $(3, 31) = 2.33, p = .09$. In the final model, as shown in Table 6.25, none of the coping measures were statistically significant in predicting post Internship Stress.

Table 6.25  Significant hierarchical regression outcomes for psychological distress difference scores between Time 1 (baseline) and Time 4 (post Internship)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Step</th>
<th>Independent Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Step 1</td>
<td>Relaxation</td>
<td>.00</td>
<td>.07</td>
<td>.01</td>
<td>.04</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement</td>
<td>-.17</td>
<td>.16</td>
<td>-.21</td>
<td>-1.06</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barriers</td>
<td>-.04</td>
<td>.07</td>
<td>-.13</td>
<td>-.66</td>
<td>ns</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Step 1</td>
<td>Mastery</td>
<td>.08</td>
<td>.03</td>
<td>.38</td>
<td>2.42</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exercise/Alcohol</td>
<td>.06</td>
<td>.21</td>
<td>-.05</td>
<td>-1.31</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CBT/mindfulness</td>
<td>-.01</td>
<td>.28</td>
<td>-.01</td>
<td>-.04</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease</td>
<td>.22</td>
<td>.11</td>
<td>.31</td>
<td>1.99</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement</td>
<td>-.08</td>
<td>.05</td>
<td>-.29</td>
<td>-1.72</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barriers</td>
<td>.00</td>
<td>.08</td>
<td>.01</td>
<td>.05</td>
<td>ns</td>
</tr>
<tr>
<td>Stress</td>
<td>Step 1</td>
<td>CBT/mindfulness</td>
<td>.40</td>
<td>.43</td>
<td>.16</td>
<td>.93</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exercise/Alcohol</td>
<td>.21</td>
<td>.26</td>
<td>.15</td>
<td>.87</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement</td>
<td>-.41</td>
<td>.25</td>
<td>-.28</td>
<td>-1.63</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relaxation</td>
<td>.13</td>
<td>.11</td>
<td>.19</td>
<td>1.15</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barriers</td>
<td>.12</td>
<td>.12</td>
<td>.17</td>
<td>.97</td>
<td>ns</td>
</tr>
</tbody>
</table>

* $p < 0.05$; ** $p < 0.01$, ns = not significant

Specific regression analyses uncovered the relative contribution of the coping strategies in predicting student-teachers’ psychological distress. No coping subscales
predicted changes in psychological distress between T1 and T4, but a decrease in Anxiety was predicted by Ease about the demands of the Internship, and Mastery.

6.6.8.3 Regression analyses between Time 2 (pre Internship) and Time 4 (post Internship)

A third set of hierarchical regression analyses were undertaken for the same 13 scale-based measures to obtain the predicted changes in Depression, Anxiety and Stress (psychological distress) from pre Internship (Time 2) to post Internship (Time 4), and these combined results are shown in Table 6.26.

6.6.8.3.1 Depression

The Time 2 Disengagement measure entered at Step 1 explained 15% of the variance in Depression, between Time 2 and Time 4. When the Time 4 Disengagement measure was added to the equation at Step 2, the total variance in Depression was 17% of the $F(2, 36) = 8.59$, $p < .001$. These Step 2 coping measures explained 17% of the variance in Depression, $R^2$ change = .17, $F$ change $(1, 36) = 9.026$, $p < .01$. In the final model the Disengagement coping measures were statistically significant, with the Time 2 Disengagement subscale (beta = .51, $p < .001$) recording a higher beta value than the Time 4 Disengagement scale (beta = -.43, $p < .05$).

6.6.8.3.2 Anxiety

The Internship Ease and Time 2 Disengagement measures were entered at Step 1 and explained 14% of the variance in Anxiety, between Time 2 and Time 4. After adding the Time 4 Disengagement and Barriers to help-seeking variables to the equation at Step 2, the total variance in Anxiety was 19.2%, $F(4, 32) = 1.897$, $p = .14$. The Step 2 measures explained an additional 5% of the variance, $R^2$ change = .05, $F$ change $(2, 32) = .941$, $p = .07$, thus they did not explain further variance in Anxiety. In the final model only Ease was statistically significant (beta = -.31, $p < .05$).
6.6.8.3.3 Stress

The Internship Difficulties and Time 2 Disengagement variables significantly correlated with Stress at Time 2. These two predictor variables were entered at Step 1. Internship Difficulties and Time 2 Disengagement measures were entered at Step 1 and explained 8% of the variance in Stress, between Time 2 and Time 4. Disengagement, Relaxation, and Barriers to help-seeking significantly correlated with Stress at Time 4. Thus, these three variables were added to the equation at Step 2. After adding them to the equation at Step 2, the total variance was 26.3%, \( F(5, 31) = 2.216, p = .07 \). The Step 2 measures explained an additional 18% of the variance in Stress, \( R^2 \text{ change} =.18, F \text{ change}(3, 31) = 2.597, p = .07 \). In the final model no coping measures were statistically significant.

Table 6.26 Significant hierarchical regression outcomes for psychological distress difference scores between Time 2 (pre Internship) and Time 4 (post Internship)

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Step</th>
<th>Independent Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Step 1</td>
<td>Disengagement T2</td>
<td>.56</td>
<td>.21</td>
<td>.39</td>
<td>2.59</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement T4</td>
<td>-.56</td>
<td>.19</td>
<td>-.43</td>
<td>-3.00</td>
<td>**</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Step 1</td>
<td>Ease</td>
<td>.05</td>
<td>.02</td>
<td>.24</td>
<td>2.31</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disengagement T2</td>
<td>.02</td>
<td>.04</td>
<td>.07</td>
<td>.66</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement T4</td>
<td>-.31</td>
<td>.26</td>
<td>-.23</td>
<td>-1.21</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barriers</td>
<td>.01</td>
<td>.11</td>
<td>.02</td>
<td>.11</td>
<td>ns</td>
</tr>
<tr>
<td>Stress</td>
<td>Step 1</td>
<td>Difficulties</td>
<td>.18</td>
<td>.27</td>
<td>.11</td>
<td>.67</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Disengagement</td>
<td>-.52</td>
<td>.28</td>
<td>-.36</td>
<td>-1.89</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relaxation</td>
<td>.11</td>
<td>.12</td>
<td>.16</td>
<td>.92</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barriers</td>
<td>-.02</td>
<td>.13</td>
<td>-.03</td>
<td>-.13</td>
<td>ns</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01, ns = not significant

Specific regression analyses uncovered the relative contribution of the coping strategies in predicting student-teachers’ psychological distress. Between Time 2 and Time 4, an increase in Depression was predicted by Disengagement, a decrease in
Anxiety was predicted by feeling at Ease about the demands of the Internship, but no coping strategies predicted Stress.

Each specific research question and its hypothesis is now discussed in terms of whether or not the results reported above provide strong, moderate, little or no support.

6.6.9 Summary of the findings in support of each hypothesis

Q1: Hypothesis 1

Findings confirmed that student-teachers in their final year of an undergraduate teaching degree were psychologically distressed. A small number fell within the mild and moderate categories for Depression, Anxiety and Stress, and a very small number fitted with the severe category for Anxiety. Thus the findings provided some support for the hypothesis that student-teachers in their final year of an undergraduate teaching degree are psychologically distressed.

Q2: Hypothesis 2

The hypothesized relationship between the specific personality characteristics of extroversion, neuroticism and conscientiousness to psychological distress could not be explored as factor analyses resulted in the formation of two new components (Emotional and Mental Strength). These results provide little support for the prediction of a positive effect of the three personality characteristics.

Lower Mastery scores, which referred to lack of Mastery, correlated with increased Anxiety post Internship, but regression analyses offered limited support for the association between mastery and psychological distress. The hypothesis that student-teachers’ personality characteristics would be positively correlated with the personality characteristics of conscientiousness, and negatively associated with extroversion and emotional stability, was rejected.
Q3: Hypothesis 3

Given that the ages of student-teachers were clustered around GenY, further sub-grouping of the variables to determine if the highest levels of psychological distress were reported by the more mature-age (Generation X and Baby Boomer) student-teachers was not possible.

Correlational analyses provide some support for the hypothesis that personal demands were associated with psychological distress, with six of the indicators of personal demands correlated with one of the three dimensions of psychological distress. Thus, there was limited support for the hypothesis that student-teachers’ personal demands would have an impact on their psychological distress.

Q4: Hypothesis 4

When the Professional (Internship) Demands Scale was reduced to two factors, there was a significant positive correlation between Ease and Anxiety. There was moderate support for the proposition that Ease related positively to reduced levels of psychological distress, thereby supporting the hypothesis that the professional demands of the Internship would be associated with psychological distress.

Q5: Hypothesis 5

The five composite coping indices developed from factor analyses of the 22-item coping scale were moderately inter-correlated in the expected directions with the outcome variables. Results provide moderate support for the proposition that mindfulness strategies in combination with CBT impacted positively on psychological distress, and anxiety decreased for those student-teachers who did initially seek help at Time1.

It was hypothesised that student-teachers’ Depression, Anxiety and Stress are associated with their use of coping strategies including Self-help, Mindfulness-based
Cognitive Behaviour, Emotional Support, Exercise, and Alcohol use. It was also hypothesised that they would use professional and peer support to manage the stresses associated with their Internship. The regression analyses provided moderate support for the hypothesis that student-teachers’ psychological distress was associated with some coping strategies.

Q6: Hypothesis 6

Barriers which prevented student-teachers from seeking help for psychological distress were combined in a new scale. As a result of the factor analyses, the combination of items used in correlations and regression analyses did not confirm the hypothesis that student-teachers’ fail to acknowledge mental health issues due to potential adverse impact on their chances of being offered a teaching position following their Internship. Thus these results provided limited support for the hypothesis that some student-teachers would not want to admit to being psychologically distressed.

Q7: Hypothesis 7

Results of regression analyses provide associations between student-teachers’ Internship demands and their coping strategies and changes in each of the dimensions of psychological distress prior to, and following, their Internship. The results did support the hypothesized relationship between student-teachers’ psychological distress, their Internship and some coping strategies and resources. The predictive scale-based variables that significantly correlated with depression, anxiety and stress included mastery, Internship ease or difficulties, and the mindfulness/CBT, disengagement or relaxation coping strategies and behaviours.

6.7 Chapter Summary

This chapter has presented quantitative data to explore the seven specific research questions and their hypotheses. Descriptive statistics revealed student-teachers’
scores on standardised and composite scales, and the levels of psychological distress. Correlations provided detail of the associations between their psychological distress, personality, mastery, demands and coping strategies and resources. Analyses of variance explored the effect of each occasion of time on student-teachers’ psychological distress, and regression analyses revealed the extent to which the identified coping strategy factors were related to changes in psychological distress.

A minority of student-teachers are psychologically distressed. Whilst most are within the normal range, when compared with the norms provided for the general population, some student-teachers’ levels of psychological distress place them into the mild and moderate range, and even severe level for anxiety. Their psychological distress increased prior to their Internship, but reduced after it.

Some coping strategies and resources, mastery and being at ease about the Internship, predicted a decrease in psychological distress. Positive strategies include using emotional and professional support, a combination of cognitive and mindfulness strategies, and relaxation, and a negative strategy was disengagement. In order to pursue the relationship between the professional demands of the Internship and coping by student-teachers further, the next chapter reports results from the qualitative data, collected from the three questionnaires, and at Cluster Group meetings at Time 3 (during their Internship).
Chapter 7 Results of Qualitative Analysis

The results of the qualitative analyses, whose aim was to test the validity of the research data through the student-teachers’ individual responses, are presented in this chapter. The researcher initially read and re-read the data from both the open-ended questions in the questionnaires on the occasion of each one being completed, and the field data taken at Cluster Group meetings, to gain an overall “feel” for the questionnaire and focus group responses provided by student-teachers. This was somewhat time-consuming, but it was undertaken in an attempt to understand the experiences of student-teachers, and to empathise with their Internship experiences, as presented in both their questionnaire responses, and reflections given in the field.

After this overall view, the qualitative data were thematically analysed, in relation to the specific research questions of this thesis, as a means of contextualising and enriching the quantitative data. The results presented in this chapter illustrate student-teachers’ responses to the open-ended questions included in the three questionnaires, (Times 1, 2 and 4). Student-teachers’ reflections were also shared at cluster meetings at Time 3. This was the time period immediately between Stage 1 of their Internship, and followed three weeks where the student-teachers had been closely observed by their school mentor teacher, and Stage 2, the three week time period when they were to conduct teaching practice independently or in a team-teaching approach with their school mentor teacher. These reflections of their Internship demonstrate the changes to their perspective on professional demands and resources once they had experienced their Internship.

Bachelor of Education primary school student-teachers responded anonymously to open-ended questions included in the three questionnaires (Q1, Q2 and Q3) and Time
3 Cluster Groups provided responses recorded in the field. The numbers of student-teachers who responded are shown in Table 7.1 below.

Table 7.1  Number of student-teachers who provided Qualitative responses

<table>
<thead>
<tr>
<th>Open-ended questions responses and Cluster Group responses</th>
<th>Number who provided written responses and were present at Cluster Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1: Baseline Internship questionnaire (Q1)</td>
<td>102</td>
</tr>
<tr>
<td>Time 2: Pre Internship questionnaire (Q2)</td>
<td>30</td>
</tr>
<tr>
<td>Time 3: Cluster Group meetings</td>
<td>100*</td>
</tr>
<tr>
<td>Time 4: Post Internship questionnaire (Q3)</td>
<td>16</td>
</tr>
</tbody>
</table>

*Note. There were 4 Cluster Groups, each consisting of 25 student-teachers*

From the original sample of 105 Bachelor of Education primary school student-teachers who responded to the baseline questionnaire (Q1), there were 102 responses to the open-ended questions. These comments were provided anonymously, as respondents were only matched by a unique code, so confidentiality was maintained, although they had consented to the use of material for this research. Of the 97 student-teachers who responded to the pre Internship questionnaire (Q2), only 30 provided qualitative data, and from post Internship questionnaire (Q3) there were 16 written responses. There were at least 25 student-teachers at each of the four Focus Group cluster meetings.

Thematic analyses of the open-ended questions resulted in clustering of comments into four major themes. The thematic clusters were 1) personal demands and responsibilities, 2) predicted Internship demands, 3) personal coping strategies and resources to manage life’s stresses, and 4) professional resources to manage the demands of the Internship. Together, these four themes provided an overall depiction of the student-teachers experiences. During the crafting of these thematic groupings, possible meanings of the phenomena were considered by reviewing the comments and focussing on the participating student-teachers’ perceptions as presented, with care taken not to frame the responses according to the research questions if this was not warranted.
Focus Group responses were gathered at Time 3, and responses grouped according to themes already established. These anonymous responses provided in-depth reflections of the student-teachers’ shared Internship experiences. Comments of individual student-teachers to illustrate these themes are included. Each student-teacher is identified only by age and a letter.

7.1 Personal Demands and Responsibilities

A theme in the responses from the majority of student-teachers related to the personal demands created due to their significant financial commitments, and the need to be employed while studying. The impact of the global (2008-2009) financial crisis was also mentioned.

7.1.1 Financial commitments

Whilst commenting on their need to be employed, due to their financial commitments, student-teachers were concerned at Time 1, which was only three weeks into their final semester, and 15 weeks before their Internship, that they would be unable to continue with any paid employment later in the year when they were required to undertake their Internship. This lack of opportunity to engage in paid work during their Internship, because it was a full-time commitment, was seen as stressful as many student-teachers had financial commitments. This included their need to finance their accommodation, travel needs and for car expenses. Although student-teachers were not specifically asked, when making comments about personal demands, many described responsibilities including rent or mortgage, car loan repayments and running expenses, family responsibilities, phone and internet expenses, credit card and other living expenses.
From the student-teachers who provided responses at Time 1, their concerns, and the percent to whom this applied, are summarised as follows:

1. mortgage or rent (34%)
2. car loan and expenses (40%)
3. phone and internet (13%)
4. child care, health care, food, electricity and clothing (20%)
5. credit card and personal loans (10%)

At Time 1, many of the student-teachers indicated that they were working, and the hours worked was divided into ranges, as shown in Table 7.2.

<table>
<thead>
<tr>
<th>Number of hours per week worked in paid employment</th>
<th>Numbers who worked in paid employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 10 hours per week</td>
<td>8 (%)</td>
</tr>
<tr>
<td>11 - 15 hours per week</td>
<td>21 (%)</td>
</tr>
<tr>
<td>16 - 20 hours per week</td>
<td>30 (%)</td>
</tr>
<tr>
<td>&gt; 20 hours per week</td>
<td>37 (%)</td>
</tr>
</tbody>
</table>

In order to meet their financial commitments, 93 (97%), of the 105 student-teachers in the study engaged in paid work whilst undertaking full-time academic study in semester 1. Of these 93, eight student-teachers worked between 20 and 50 hours per week full-time. There were a further 30 student-teachers who worked between 16 and 20 hours per week. One of these student-teachers actually worked double shifts in the first semester, but she relinquished one shift when engaged in her full-time Internship. A further 21 student-teachers worked between 11 and 15 hours per week, and the remainder worked between 5 and 10 hours per week.
Those who worked expressed a wish to put their time, when not employed, into creating a positive image with their Mentor Teacher, because of the important link between receiving a favourable report at their Internship and achieving a future teaching position. Their comments also reflected an awareness of the strain their work and study imposed on relationships and other family members, as encapsulated in the following comment:

My husband has to work two jobs to keep up with the bills. This makes me feel guilty and stresses me even further (female student-teacher A, age 30).

The global financial crisis (2008-2009), and the economic climate at the time of this study, together with the demands of caring for a family member who was disabled was an example of the extreme stress faced by some student-teachers. Replies also included taking out personal loans, which they planned to repay with their teaching salary upon obtaining a position. In one such example a student teacher who worked prior to the Internship, reported the following:

I feel extremely stressed. My husband is in the building industry, and we are faced with dealing with bankruptcy, therefore I have to work at a second job to support the family (female student-teacher B, age “not provided for reasons of confidentiality”, works up to 40 hours per week).

The lack of opportunity to engage in paid work during their Internship, due to the fact that it was a full-time commitment was common in comments made in response to open-ended questions at Time 1 (Q1) baseline data. However, as illustrated in the comments below, the same student-teacher in Q2 pre- Internship, then in Q3 post-Internship (Time 2 and Time 4) indicated that she was still very conscious of, and stressed by, the impact of the full-time commitment to the Internship, even after the Internship, for example:
Not being able to work during the Internship will make it hard to pay bills, and keep on top of things (female student-teacher C, age 24).

Not being able to work, when I still have to pay the rent and my bills was stressful (female student-teacher C, age 24).

7.2 Predicted Internship Demands

The second theme, related to professional demands, was the impact of the academic program and time commitments, and the stress associated with the requirement to attend the Capstone program in the inter-semester break, before the Internship, which impacted on preparations for their Internship. Another professional demand was the perception that it would be necessary to do well at the Internship in order to secure a teaching position. Each of these will now be examined.

7.2.1 Perceived stress due to academic program and time commitments

In the responses provided by student-teachers, there were 43 references to the time needed to manage their academic program, and professional demands associated with the need to prepare for their Internship. This theme was developed from an analysis of responses to an open-ended question following completion of “Section A: Your Levels of Stress,” and “Section E: Your Internship” in the initial questionnaire (Q1), and repeated in questionnaires 2 (Q2) and 3 (Q3).

Illustrative comments, presenting data on different factors associated with stress and the Internship, demonstrate individual student-teachers’ psychological distress associated with assignments in the first weeks of the academic year, and stress due to personal time management and other issues such as their computer crashing, are as follows:

Too much is expected of us in a limited time (female student-teacher D, age 20).
I was stressed above average due to the workload expected in our final year [of the B.Ed degree] (female student-teacher E, age 28).

Not all of the 95 student-teachers who responded to these open-ended questions were stressed by the workload or university course demands. Three mentioned that they were very well organised, and two mentioned that they had become organised by necessity, as a means of getting through what they predicted to be a very busy year, and they recognised that it was necessary for their personal well-being. One student-teacher, having become unmotivated in her third year of the B.Ed, noted in Q1 that her interest was renewed in her final year as follows:

I had lost interest in third year, but I have a new frame of mind this year, and a new motivation because my goal is closer (female student-teacher F aged 22).

7.2.2 Requirements to attend the Capstone Program immediately prior to the Internship and its impact on Internship preparations

Most student-teachers, when completing the first questionnaire (Q1) at Time 1, said they were stressed due to the assignment workload. Student-teachers were required to complete the Capstone Program immediately prior to the Internship. This was scheduled to occur immediately following completion of Semester 1. For other university students, this was their semester break. However, for student-teachers, there was no semester break. Their full-time attendance was required on-campus. Attendance precluded time for preparation of teaching materials for their Internship, which followed the Capstone Program. Student-teachers’ views following the Capstone training program, and just prior to undertaking the Internship, had changed. At this time, in Q2, the Internship was mentioned as a source of stress for many student-teachers, as shown in the following comments about their needs and preparations for their Internship, below:
Holding the Capstone course just before our Internship was very stressful because there was no planning time left (male student-teacher G, age 26).

Because of Capstone, I am feeling particularly stressed, as they haven’t left us enough time to plan for the Internship (female student-teacher H, age 30).

Student-teachers also reported that the Capstone experience, and associated time demands, had impacted on their personal relationships. This is emphasised, as reported in the two examples which follow:

Capstone stressed me so much I couldn’t handle it and stressed out my already stressed relationship with my boyfriend of 4 years. The end of this relationship further added to my stress, so at this point my emotional status is shaky (female student-teacher I, age 22).

I am a stressful person, and this Capstone stress has escalated it. I had a fight with my mother. I am a high achiever, therefore I put everything into the experience, and I know I will become an emotional wreck in the Internship (female student-teacher J, age 22).

Other misgivings outlined prior to the Internship included poor communication with their Mentor Teacher leading up to the Internship, and feeling stressed by their perception of the teacher’s expectations of their performance. Some student-teachers were also concerned at not knowing what would be expected of them. Others feared that too much would be expected in a limited time, and there was brief mention of concerns about managing the behaviour of the school students. A sample of responses from Q2 is illustrative of the student-teachers’ feelings at the time, and the repetitive comments in the second example are indicative of the ruminative thinking common to depression:
I am feeling very stressed at the high standard that is required of us at the
Internship. This is the most important prac so far therefore the stress of needing
to perform will be evident (female student-teacher K, age 34).

I don’t tend to stress generally. However, I do find myself thinking about things
over and over to convince myself everything is OK and I will get everything
done. I always schedule my days to help organise my thoughts (female student-
teacher L, age 22).

The comments from student-teacher L above highlight the psychological distress
she felt. She attributed her personal stress to the academic program, and associated time
commitments, but her comments also indicated a tendency to ruminate (“think about
things over and over”), a feature of depression. However, she also seemed practised in
applying positive self-talk which is a well-known coping mechanism for psychological
distress.

Following the Internship (Time 4), the student-teachers’ responses were quite
different from those provided at Time 1 and Time 2. The student-teachers’ views had
changed from negative, at Time 2, to positive at Time 4. The impact of the Capstone
experience, and their fears about lack of time to prepare for the school experience,
which had been repeatedly mentioned at Time 2, appeared to be of less relevance at
Time 4. This is encapsulated by the following comment:

I have enjoyed every day of my Internship. To my great surprise, this was an
extremely enjoyable time with little stress. I made sure I was well prepared in
advance and worked ahead each weekend, so that the weeks progressed
smoothly, and I slept well (female student-teacher M, age 25).
7.2.3 Perceived connection between Internship performance and securing a teaching position

Student-teachers in the pre Internship questionnaire (Q2) discussed their views about how the Internship would affect their future prospects for employment as a teacher. As they considered their Internship stress levels were high. They indicated apprehension about their future, and reported being worried about getting a job, particularly in view of the financial sacrifices they had already made in order to study. A sample of responses from Q2 is illustrative of their feelings at that time:

- I feel overwhelmed when I think about the future. I expect the Internship to be the main cause of my stress. It is hard because the expectations are so great, and the forthcoming Internship even predicts my future, but I have other commitments as well, so it will be difficult to deal with (female student-teacher N, age 22).

- Our whole career depends on our performance in this Internship, and now there’s not enough time given to us to prepare for it. After being so long at university and being broke, a job is vital, so I must do well at the Internship (female student-teacher O, age 22).

- Many student-teachers planned to use their teaching salary, upon obtaining a position, to repay their debts. Thus, they placed great store on their performance at the Internship and the impact they would need to make on their Mentor Teacher. They hoped that their performance would lead to being given a positive reference. They expected to use their reference in the Interview process with the teacher registration body called the Queensland College of Teachers. They were concerned about gaining employment as a teacher, following the Internship, and also were dependent on their
performance at the Interview, which would be held after the Internship. Their feelings are expressed as follows:

I intend to ask as many questions as possible although I will be thinking of my reputation for further employment and hoping my teacher gives me a good reference to use for when I get an interview (female student-teacher P, age 34).

There is too much stress from the “red tape” we have to fill out and go through in becoming a teacher, and then there is stress at the possibility of not getting employed as a teacher (male student-teacher Q, age 23).

After the Internship, student-teachers’ moods had changed. Responses provided in their final questionnaire (Q3), completed following the Internship, provided a more positive perspective. Just as the impact of the Capstone experience, and fears about lack of time to prepare for the school experience seemed less relevant, most student-teachers wrote in Q3 about developing good relationship with their Mentor Teacher. This support from their Mentor Teacher assisted them to cope with the demands of their Internship. Thus, overall, in the 16 qualitative responses provided at Time 4, responses to the professional demands of the Internship were very different from those at Times 1 and 2.

The word “confidence” came through in several responses. Time management continued to be an on-going issue, but there was a sense of optimism that they would be placed in the profession and successfully manage new teaching careers. Their preparedness to push themselves to meet the demands of the Internship was obvious in the comments made by those who returned Questionnaire 3, following the end of their Internship. They had worked hard and willingly. However, they identified their exhaustion in meeting the demands, as expressed in these final concluding statements below:
Overall I had a very positive Internship. I really enjoyed it and look forward to becoming a teacher (female student-teacher R, age 25).

This Internship is important to my future, so I had to impress my mentor. I also needed to do extra-curricular activities to aid my Resume, but it was exhausting (female student-teacher S, age 21).

7.3 **Personal Coping Strategies and Resources**

The third major theme related to Coping Resources. Student-teachers considered these as either personal coping strategies or resources to manage life’s stresses. For some student-teachers, resources had already been found, as they had required professional support to manage previous suffering due to mental health issues and associated diagnosed psychological conditions.

7.3.1 **Personal strategies and resources to manage life’s stresses**

Student-teachers mentioned several strategies in Q1, with similarities to cognitive behavioural (CBT) practices, such as those incorporated into web-based programs for depression and anxiety (Christensen, Griffiths & Korten, 2002), which they used to manage stress, and mindfulness practices. The CBT strategies included understanding and overcoming patterns of irrational thinking, using behaviours such as assertiveness, problem solving, relaxation, and engaging in a variety of pleasant activities including spending time with friends, and exercise. Examples of these strategies are outlined in a selection of responses below.

7.3.1.1 **Cognitive behaviour strategies**

Student-teachers wrote about their mental health and well-being, and use of cognitive behavioural strategies to manage their mood.
7.3.1.1  Understanding and reframing irrational thoughts

A male student-teacher wrote about how he developed insight into his depressed thinking and negative behaviours with the help of a psychologist. He said that, with help, he had learned to develop a “positive mindset”. A female student-teacher mentioned that, having had two previous bouts of depression, she had learnt to reframe her thinking, and she was also taking medication to manage her mood. There were three others who also mentioned taking medication and taking time out to manage previous depressive episodes.

7.3.1.2  Self-help using the Internet

Some student-teachers looked on the internet for strategies. One female, who said she had obsessive compulsive disorder (OCD), an anxiety disorder, used the internet to look for strategies to help her manage the disorder. She was particularly stressed at Time 1 by “the high standard required”, and at Time 2 she also said that she recognised “This is the most important practicum so far. Therefore the stress of needing to perform will be evident”.

Other used the internet as a diversion, when stressed, or to provide a source of comfort, as found in reading the stories by others with similar issues, as follow:

I find the internet provides me with stress relief (female student-teacher T, age 26).

The quotes I look up on the web help me when I am stressed (male student-teacher U, age 29).

I look up blogs from others who are in the same situation as me, and this seems to help (female student-teacher V, age 22).
Several student-teachers referred to their use of humour as a coping mechanism. In particular they used the various forms of media available, such as watching a particular television program for stress release. They also looked for humorous internet quotes, televised humour and the internet for comedy used as stress relief, as exemplified by these comments:

I cope with any stress by watching comedy on TV (male student-teacher W, age 21).

I use medication, but I find inspirational quotes on the web, and these motivate me (female student-teacher X, age 21).

7.3.1.1.3 Problem solving and relaxation

Some student-teachers reported being aware of their need to release frustration appropriately. One student-teacher described being cognitively aware of venting when he wanted to resolve behaviour and feelings associated with anger, and also using relaxation to manage his stress, as follows:

Life presents many challenges. At times I know I get angry, but I have learnt that if I let it out in a “controlled burn” I will find that I feel better … I believe that the trick is to protect my mental health by using simple relaxation strategies until I work out solutions (male student-teacher X, age 26).

7.3.1.1.4 Pleasant activities

A number of student-teachers referred to spirituality, and their religious practices in regard to their ability to cope with stress. One example was:

As a Christian I found just telling God, when I was overwhelmed, to help me, and again using the Scriptures to say in my mind, to encourage myself, is what
got me through my Internship. As a Christian, I pray a lot, read my Bible and hand my worries and any stress I have to God (female student-teacher Y, age 22).

Time spent with others as a means of relieving stress was a common theme. Typical examples from the student-teachers who referred to spending time with friends and family as a means of releasing stress, are represented by the following remarks:

I laugh with friends and family, go for a walk, watch humour on TV. I felt that having the support of my family was great as they could help me out. It was great to know that they were there for me, and if I needed to get something done but didn’t have the time, I knew I could trust that they would do it for me (female student-teacher Z, age 34).

Various forms of exercise were also listed among student-teachers’ coping resources. They included karate, horse riding, walking, sports coaching, going to the gym and taking sessions with a personal trainer. The results were considered to be positive, as reflected by this student-teacher:

Exercise helps, and is a great outlet to the built up worry inside me (male student-teacher A1, age 29).

7.3.1.2 Mindfulness

In addition to the CBT strategies, the mindfulness practices found in yoga and meditation were also mentioned. For example, one student-teacher described her practices for coping during her Internship as follows:

I used meditation, and looking and reflecting on the light at the end of the tunnel was imperative (female student-teacher B1, age 22).
7.4 Professional Resources to manage the Demands of the Internship

Following the Internship experience, the final (fourth) theme related to the Internship, and, in particular, the formation of a positive relationship with their Internship Mentor-Teacher. Professional coping resources included reference to the importance of a positive relationship with their Internship Mentor Teacher. When considering the impact of the professional demands of the Internship, and their future as teachers, in Questionnaires 1 and 2 student-teachers reported on the existence of coping strategies and resources they already used to manage life’s stresses. They associated mental health, and cognitive behavioural strategies such as relaxation and problem-solving, to manage stress.

7.4.1 Mentor teachers’ support

Some student-teachers commented pre Internship that they expected a positive relationship with their Mentor Teachers would help them cope with teaching demands. One anxious student-teacher, who reported feeling stressed about managing school student’ behaviour and overwhelmed by time constraints, nevertheless said she was reassured that her Mentor Teacher would help alleviate her distress. The student-teachers who responded to the post Internship questionnaire reported that their Mentor Teachers’ support had been a most valuable resource for relieving their stress.

7.4.2 Peer support and barriers

Although many student-teachers stated that they sought support for personal stress from friends and family, this was not the case with their Internship stress. They preferred to talk to their peers, as they felt they had a common understanding of the requirements, and the stresses associated with time management, their university assignments, or the prospective Internship. Of those who slept poorly, they reported anticipating that this would worsen as they became more stressed by the Internship
demands. These findings are encapsulated in the following comments by student-teachers:

It is too hard to talk to my friends and family about this sort of stress because they don’t understand what is expected of us at university (female student-teacher C1, age 21).

I sleep poorly and I already have other commitments, but this Internship predicts my future so sleep will be difficult (male student-teacher D1, age 27).

7.4.3 Stress management strategies taught at University

There was no evidence that such strategies were taught in their B. Ed. course. Nevertheless, such strategies would have been valued by some student-teachers, as encapsulated in the following remark:

I was really stressed because I put my heart and soul into it. It was fulfilling, but other aspects of my life suffered due to the depletion of all my energy. I found I always put the Internship first. I know I survived, but I could have used some stress strategies (female student-teacher E1, age 36).

7.4.4 Professional support for mental health issues

Some student-teachers mentioned in Questionnaire 1 that they had already been diagnosed with, or previously been treated for, psychological distress. The conditions referred to diagnosable psychological conditions, and the impact was described in some cases. Both female and male student-teachers who were distressed revealed details of the professional support they received from their general medical practitioner (GP). This support included medication, and referrals for therapy.

Some student-teachers mentioned their regular sessions with psychologists for the treatment and management of their on-going depression. The reported sessions with
GPs and psychologists covered a range of student-teacher age groups. Two student-teachers also mentioned consultations through the university counselling service. Typical comments include the following:

I have had two bouts of depression, for which I am on medication. I also see a psychologist, and practise yoga (male student-teacher F1, age 39).

I have depression for which I see my GP. She put me on medication, and referred me to a psychologist, who has helped me to manage (female student-teacher G1, age 31).

I currently receive medication for stress from my GP. I can also talk to her about my worries (female student-teacher H1, age 42).

First and Second year [at university], I had regular sessions with a psychologist for depression and anxiety (female student-teacher I1, age 21).

I have seen a university counsellor for stress (female student-teacher J1, age 24).

Two other student-teachers, whilst reporting suffering from stress-related symptoms, wrote that they had not sought help for mental health issues, although one who was considering her options at Time 1 said:

I suffer from heart palpitations. I usually experience them at about midterm. I am considering I may need to see someone (female student-teacher K1, age 30).

The overall findings from the comments made on the questionnaires indicated that student-teachers were stressed by financial and other personal demands, and several had first-hand experience of mental health issues, having personally been treated for depression or anxiety. Many also felt stressed by the university assignments and the implication that their Internship performance would impact on their future teaching
career options. Their stress management strategies included cognitive behavioural practices, such as understanding irrational thoughts, problem solving, relaxation and engaging in pleasant activities, which incorporated spiritual practices, spending time with family and friends, and exercise. They anticipated a positive relationship with their Mentor Teacher, peers and continuing professional support would help them throughout the Internship.

7.4.5 Demands and resources: feedback from Cluster Group meetings

Student-teachers outlined, in Q1 and Q2, several misgivings they held prior to the Internship. These included feeling stressed by poor communication with their Mentor Teacher leading up to the Internship. They also felt stressed because they did not know what the Mentor Teacher expected, and they feared that too much would be expected from them in the limited time they had in schools during their Internship.

At Time 3, although midway through their Internship, student-teachers had not yet experienced sole responsibility for their classes. They had been under the supervision of Mentor Teachers. These teachers had all reported positively on their student-teachers’ progress in a meeting held the previous week with the University Practice Teaching Convenor. Thus, the student-teachers’ earlier misgivings seemed to be largely unfounded.

The researchers’ field notes, made during attendance at each of the Focus Group meetings, show that the student-teachers’ Internship experiences were extremely positive. Many had changed their perspectives on the stresses associated with their Internship as captured by the comments made at the mid-Internship Cluster Group meetings.
7.4.6 Professional demands and the Internship experience

In recording student-teachers’ comments, no age or identifying feature was sought. Their comments, informally recorded, with permission, by the researcher as observer in the Cluster Group meetings conducted by the University Internship Convenor with the student-teachers, outlined their positive experiences to the demands of their Internship. Student-teachers admitted to some demands they still wanted to work to improve, such as time management and managing student behaviour, and having a wider experience during breaks at school, rather than remaining in the classroom with their Mentor Teacher.

Student-teachers engaged willingly in extra-curricular activities, and spoke of a desire to become even more involved with school students on their own, with other staff and with parents for the remainder of their Internship. Some spoke about their willingness to volunteer and become involved, in extra-curricular activities. For example, one student-teacher had enjoyed involvement at the Sports Carnival, during which she was one of the time keepers. She reported that a positive aspect of her involvement was that it enabled her to interact with a diverse and wider spread of teachers. Another student-teacher had even begun a lunchtime Drama class, which was popular and well attended.

Student-teachers also reflected on their plans for Stage 2 of their Internship, in which they would spend more time as sole teacher in the classroom, but also get out more to experience other avenues of school life such as mixing with other staff and sharing children’s progress in meetings with parent. Their comments were recorded without identifying whether or not they were made by male or female student-teachers, as follows:
My time management needs some improvement. I was really pleased when the lesson just before lunch ended, and the children were so engrossed they didn’t even want to go out and have lunch.

It [teaching] is incredibly busy. I spend every spare hour at night preparing lessons, but it’s a fabulous experience.

I have started a reward system to try and manage [school students’] behaviour. It has taken lots of time to design and produce the resources, but it’s worth it, and they have all responded really well.

It has been great with the kids, but I can see it might be a bit different if I was on my own in the classroom with them, because I am sort of more like their friend.

I would like to get out of the classroom more. My teacher seems to stay there at every break too, and because she stays in, I feel I should stay there too, but I would like to get out in the staff room more and into the playground.

I really enjoy the children coming up to me, although it’s a bit confusing for them as I am only the second teacher. I can’t wait until I have them all to myself.

I loved having the class to myself when my teacher came to the [other] Cluster Group meeting for mentor teachers

My goal for the second half is to spend more time in the staff room. We have a briefing once a week before school, and I see that there are so many teachers, but everyone seems really busy.

What I’d really like to do next is to attend some parent teacher meetings. It would be great to meet the parents and talk to them about their children.
The comments indicated student-teachers’ motivation to participate in all aspects of teaching, as they eagerly anticipated the second half of their Internship. They had developed some self-awareness of the teaching role and responsibilities, as well as some of the challenges, including time management, relating to students and behaviour management.

7.4.7 Professional resources and the Internship experience

Student-teachers reported feeling supported by staff, including their Mentor Teachers and School Administrators such as the Deputy Principals, and were excited by the physical resources available to assist them in their teaching practice, and the opportunity to engage with parents, as reflected by the following selection of responses made by student-teachers in Cluster Group meetings at Time 3:

My mentor teacher is fantastic. She goes off to the staff room, or on some other errand, and trusts me to manage the class. It feels great.

I would like to spend more time in the staff room getting to know other staff. I’m going to try and get up there at lunchtimes, at least for a little while, but it’s kind of hard because the children all seem to want to spend time with me too.

It was quite scary, knowing the Deputy Principal was coming to observe my lesson, but I settled down and the children were so well behaved that it all went beautifully. She was really nice afterwards. I have found all the staff to be extremely helpful and friendly.

They [the school] have really amazing equipment. I was worried about the Interactive Whiteboard, but my Mentor Teacher showed me what to do, and it is fabulous. I use it all the time now.
It [the school] is a very busy place. There are always things going on. I have enjoyed some chats with parents who came into the classroom when they dropped their children at school in the mornings.

The professional resources available to assist student-teachers during their Internships included equipment (Interactive Whiteboard) and people (Mentor Teacher, Deputy Principal, all the staff).

7.5 Chapter Summary

The qualitative data was analysed for global themes. The data were considered in the context of the three occasions of data collection (T1, T2 and T4) and the Focus Group meetings in the four cluster school groups (T3) in tandem as a means of enriching the quantitative data, and vice versa. The qualitative data were intended to enhance the data analysis because student-teachers’ were able to enlarge on ideas raised by the questions posed in the questionnaires, and to further explain their responses. These results shed light on the student-teachers’ experiences and responses, by providing more detail about phenomena that might have been difficult to otherwise convey. In particular, Q3 provided student-teachers with an opportunity to expand their responses, following the Internship, and data collected by the researcher at Focus Group meetings during the Internship also enriched the quantitative responses provided to the open-ended questions from all three questionnaires.

Four themes emerged from the qualitative data, related to personal and professional demands and coping resources pre and post Internship. First, under the theme of personal demands, it was shown that student-teachers perceived a need to engage in paid employment in order to meet their financial commitments, but they were also concerned because they could not continue with their paid employment whilst engaged in a full-time Internship in Semester 2.
The second theme, professional demands, was illustrated by comments pertaining to personal stresses due to the academic program, time commitments and the need to prepare for the Internship. Student-teachers’ perceived it necessary to perform well at the Internship, and obtain positive feedback from their Mentor Teacher, in order to secure a teaching position. During the initial phase of data collection, the student-teachers appeared to be anxious about what was expected at their Internship. They revealed high expectations of self and career, and used descriptions such as feeling overwhelmed, exhausted and in a shaky emotional state. However, whilst post-Internship data was limited to only 16 of the 39 student-teachers who returned Q3, the results from the Q4 open-ended questions, as well as the Cluster Group data, presented the Internship as a more positive experience than had been predicted initially by student-teachers.

A third theme was the personal coping resources used by student-teachers to manage life’s stresses. Some student-teachers were anxious or depressed, and had received medical and psychological help. Their strategies included cognitive-behavioural and mindfulness practices including rational thinking, self-help using the internet, problem solving and engaging in pleasurable activities such as seeking spiritual guidance, practising various forms of exercise sense, relaxation, maintaining a sense of humour, and using yoga and other meditative strategies associated with mindfulness.

The fourth and final theme highlighted the importance of professional resources, including a positive relationship between the student-teacher and their Mentor-Teacher, having peer support, and accessing primary health care providers for mental health issues. Thus it can be concluded that some student-teachers who are psychologically distressed will seek support from therapists. As most student-teachers are highly stressed prior to their Internship about financial matters, their teaching practice and
career options, and teaching has high rates of attrition in the first five years, it is important that they can cope with the demands. Their personal coping practices, loosely based on CBT, include social, spiritual and family support, and exercise, and at the Internship they obtain support from Mentor Teachers. Some access strategies via the internet, and others use mindfulness practices. These strategies could form the basis of future stress management programs in teacher education.
Chapter 8 Discussion

8.1 Introduction

This chapter provides a synthesis and discussion of the research findings presented in Chapters 6 and 7, which evaluate primary school student-teachers’ levels of psychological distress, links with personality, mastery, their personal and professional (Internship) demands, personal coping strategies and resources they use, barriers to help-seeking, and relationships between these factors and their psychological distress. In this chapter the specific research questions stated in Chapter 1 are addressed and discussed in light of the literature regarding psychological distress, the demands on student-teachers, and previous coping research, particularly in relation to teachers and, where possible, to student-teachers.

The initial aim of this study was to develop an understanding of primary school student-teachers’ underlying levels of psychological distress, to determine if this was statistically significant, and higher than among the general population, and whether or not certain demands, including the Internship, or use of particular coping resources may explain why some student-teachers are less psychologically distressed than others. The aim of this chapter is to interpret the research findings, critique the research design and theoretical framework, and assess their importance for Teacher Educators involved in providing pre-service training for student-teachers in the future.

The study design was based on a mixed method approach to data collection, using primarily quantitative data obtained from three questionnaires incorporating validated instruments and scales constructed for this research and qualitative data obtained from student-teachers’ responses written in these questionnaires, together with field data from student-teachers’ Cluster Groups. These methodological decisions, consistent with Mackenzie and Knipe (2006, p.5)’s definition of methodology as the
“overall approach to research linked to the paradigm or theoretical framework, while the method refers to systematic modes, procedures or tools used for collection and analysis of data” fit the pragmatic paradigm adopted for this research.

Quantitative and qualitative research holds a number of assumptions and characteristics in common, and the variations that a quantitative or qualitative study might draw from, in the way of design or intent, are established by adopting a pragmatic paradigm in this research. Consequently, by adopting a mixed method study design, reliability, problematic within the social sciences due to different environments and the changes in human behaviour (Merriam, 2009) was established.

This research, based on questionnaire responses to standardised and other instruments, and thematic analysis, using the ‘framework’ approach for making sense of the data when collapsed into broad themes (Creswell, 2008), provides sufficient information about the established reliability of the research tools, and the setting in which the research was conducted. In keeping within the pragmatic paradigm, open ended questions were very important in this research so that student-teachers could report freely about their experiences and understandings. The new Demands, Coping and Well-being framework developed for this mixed method study contributes to the literature so that other researchers evaluating or critiquing the overall design can determine for themselves whether the findings can be transferred to other educational settings.

Time 1 quantitative data were analysed first to provide a baseline, then subsequent analyses examined pre- and post-Internship responses, to determine the effect of the Internship. Qualitative data from the three questionnaires were scrutinised to capture student-teachers’ personal responses about their Internship, coping strategies, and psychological distress.
This chapter begins with a series of discussions of the ideas regarding the influence of demands, personality and coping strategies and resources on student-teachers’ psychological distress, and is followed by a discussion of the results from analyses of the quantitative and qualitative data to address the seven specific research questions of this study.

The seven sets of research questions, identified in Chapter 1.4, are used to organise the chapter. The first set of questions explores the prevalence of psychological distress among primary school student teachers, based on their depression, anxiety and stress during Semester One, Week Three (March), in the final year of their undergraduate degree. Relationships between personality, mastery and psychological distress are discussed, followed by a discussion of the demographic variable and select personal demands, including financial demands and paid employment, and the prevalence of psychological distress.

The second set of questions, Research Questions 5, 6 and 7, refer to the coping strategies used by, and resources available to, student-teachers, and associations between the timing of their Internship, psychological distress, coping strategies and barriers. Student-teachers’ coping strategies to manage their general psychological distress are discussed next. This is followed by a discussion of student-teachers’ Internship at four distinct times, baseline, pre Internship, during, and post Internship. Student-teachers’ coping strategies and resources, barriers to help-seeking and further relationships between variables is then discussed.

The specific research questions of this study address psychological distress and coping among a selection of Australian university student-teachers in their fourth year of a primary school education degree. The findings about these student-teachers, discussed in this chapter, represent their responses to questionnaires, and Cluster Group
feedback, taken throughout their final year. The study traversed the final year of the student-teachers’ academic year, including a six-week Internship, and results were obtained at different time intervals. The outcomes were initially explored to provide a baseline, to determine the initial extent of psychological distress, and from those results, pre- and post-Internship associations are then drawn. Post-Internship data analysis in the final section of the study was limited, due to the small response rate, but robust enough to meet the criteria for subsequent analyses. Supplementary qualitative data were scrutinised to augment the quantitative questionnaire data.

The discussion of the data in response to the seven Research Questions includes the trends and exceptions that emerged from the data, and the influence of the theories, included in a new framework developed for this study. The Demands, Coping and Wellbeing (DC-W) theoretical framework, integrating two main theories, Bakker and Demerouti’s (2007) Job Demands and Resources (JD-R) theory and Montgomery and Rupp’s (2005) Teacher Stress Cycle (TSC) theory, with an additional emphasis on contemporary cognitive and mindfulness strategies, exercise, alcohol and other resources, including health practitioner support and barriers to help-seeking, is discussed in terms of its relevance for this study, based on results reported in Chapters 6 and 7. This discussion also addresses the mixed method design (Creswell, 2008).

Where possible, generalisations are drawn between these results and other studies, and possible effects which may be accounted for by other factors are discussed. Conclusions drawn, and the importance of these conclusions to Teacher Education authorities, are discussed in Chapter 9 of this thesis.

8.2 Scope of this study

The literature reviewed in Chapter 3 indicated that psychological distress is significant among the general population (Murray & Lopez, 1997), and that foundation
underpins this evaluation of student-teachers’ psychological distress. The data analyses make it clear that there is reason to believe that the prevalence of depression, anxiety and stress claimed within the literature is also representative of Australian primary school student-teachers. The comments made by student-teachers contribute most obviously to identifying the extent of their psychological distress at Time 1, and their comments agree with the literature, that mental health concerns present a potential risk for student-teachers when beginning their careers as primary school teachers.

It extends the scope of other studies, including secondary school student-teachers in the UK, Hong Kong, and Australia (Chan, 2002; Chaplain, 2008; Murray-Harvey, 1999), early childhood student-teachers in Australia (Sumsion & Thomas, 1999), and other Australian student-teachers (Campbell & Uusimaki, 2006), by focussing on primary school student-teachers in Queensland, Australia.

This study also provides cogent analyses of the past trends of psychological distress in the general population, university students, teachers and student-teacher education. The statistical data reveals the likely direction of student-teachers’ psychological health and well-being if these trends are to continue. Furthermore, it quantifies the contribution of the teaching Internship and student-teachers’ coping strategies on their psychological distress.

Equally important is the contribution of student-teachers’ qualitative feedback in terms of consistently supporting the quantitative findings, and enriching the data through more detailed descriptions of the relationship between the demand parameters and student-teachers’ well-being. The study results may contribute to the Australian Governments’ “Smarter Schools National Partnerships” reforms in the area of Teacher Quality, as it supports the focus on improving teacher quality by attracting, training, developing and retaining quality teachers.
This study expands the scope of the two main theoretical frameworks underlying this thesis, by providing a new comprehensive framework with parameters relevant to the way in which the Internship, coping strategies and resources shape student-teachers’ psychological distress. Quantitative data analyses alone may have enabled the drawing of some conclusions relating to the main phenomena (Cresswell, 2008), however, the qualitative data in this mixed method design facilitated further explanation of the relationships between demands, student-teachers’ coping and their well-being.

Psychological distress is expected to continue to contribute to the burden of disease in Australia (Begg, Vos, & Barker, 2007), and attrition among beginning teachers (Wilhelm et al., 2000). Typically university teacher education staff and school mentor teachers work in different spheres, which can generate discontinuities between what is done on campus and what happens in practice within the professional workplace when student-teachers enter schools to undertake an Internship.

In Victoria, quality teacher education is considered a strategy for enhancing quality education (Ingvarson, Beavis, & Kleinhenz, 2004). Therefore, the most obvious outcome is the potential for further research to be undertaken in order to get a more detailed picture with a broader cross-section of primary school student-teachers, awareness of teacher educators, and the impact of stress management programs incorporated into future teacher education curricula.

These analyses are sufficient as a basis for introducing stress management programs in teacher education similar to those that have been effective in the community (Baer, 2003; Bower, Byford, Sibbald, Ward, King et al., 2000; Davidson et al., 2003; McEvoy & Nathan, 2007), and among university students in various faculties (Finkelstein et al., 2007; Redwood & Pollak, 2007; Werch et al., 2007). An essential
link has been made between aspects of the demands on student-teachers, and their future psychological health and well-being. The burden of disease in this country is linked to depression and anxiety (Begg et al., 2007), and there are significant resignation rates, representative of other parts of the world, among early career teachers (Ewing & Manuel, 2005). Therefore, the findings from this study may contribute to teacher educators’ awareness, and the Queensland government, an employer of student-teachers upon graduation, may consider how to incorporate the implications arising from these findings, as discussed further in Chapter 9, for the well-being of early career teachers.

8.2.1 Psychological distress in this study

Psychological distress is a term used frequently in the health care literature, to refer to depression and anxiety, which often co-occur (Parker, 2006), and psychologically debilitating stress which can arise from university students’ academic work, relationships and living environments (Muirhead & Locker, 2007). As the origin of the concept has not been clearly articulated (Ridner, 2004), this research is based on similar studies with university students (Wong et al., 2006).

8.2.2 Predictors of psychological distress

Demographic characteristics of student-teachers in this study were representative of other university students. Past researchers have investigated the prevalence of psychological distress among the general population and among university students, reporting that psychological distress is higher among university students in various university faculties world-wide, than among the general population (Wong et al., 2006). In this study, student-teachers were single and stressed by academic study, factors in the research which support an association between relationship status, emotional instability, stress from academic study and work, anxiety and depression, and suicidal thinking (Muirhead & Locker, 2007; Tyssen, Vaglum, Gronvold, & Ekeberg, 2001). Research
shows that being optimistic and extroverted corresponded with law students’ motivation and well-being (Pritchard, Wilson, & Yamnitz, 2007; Sheldon & Kreiger, 2007), but the impact of personality on student-teachers psychological well-being could not be confirmed from this study, due to a design flaw arising from the use of only three items from the Ten Item Personality Inventory.

8.2.3 Coping with the Internship and other demands

Teaching, and by extension the student-teachers’ Internship, which involves teaching practice, is expected to be stressful (Campbell & Uusimaki, 2006). Individuals require adequate resources, especially when their work is demanding (Bakker & Demerouti, 2007), but the research was not confined in scope to professional demands, with a comprehensive picture of student-teachers’ psychological well-being going beyond confirming an association between the student-teachers’ Internship and resources.

Social science research reveals that individuals’ coping behaviours and cognitions, as distinct from personality characteristics, are most effective in dealing with personal demands, such as child-rearing, and least effective with work-related demands (Pearlin & Schooler, 1978). Research also reveals the benefits of stress management programs offered in medical training, in response to academic, social and financial pressures (Moffat et al., 2004; Shapiro et al., 2000). Positive coping strategies also include dissemination of health information using the internet (Leach et al., 2006), other experiential and self-help cognitive therapy, including problem-solving (Kendrick et al., 2005) for anxiety and depressive disorders (Kaltenthaler et al., 2006; Lee & Graham, 2001; Proudfoot et al., 2003; van den Berg et al., 2004; Vincelli, Choi, Molinari, Wiederhold, & Riva, 2000), and programs based on mindfulness (Pritchard et al., 2007; Shapiro et al., 1998). Negative coping strategies and alcohol use contributed
to stress and poorer well-being among law students, and (Lapshin et al., 2006) report that computerised interventions can help overcome the stigma associated with mental health issues.

In order to get a more detailed picture of the way in which coping strategies are shaping the psychological well-being of student-teachers in Australian primary schools, the new Demands, Coping and Well-being theoretical framework, based on the insights from the psychological distress literature, shapes a view of approaches they take beyond confirming an association with resources provided by university or school staff. Teaching demands alone may not contribute to student-teachers’ psychological distress, because both personal and Internship demands were conceptualised as potentially psychologically distressing. However, in the absence of coping strategies and resources, it may increase in relation to the expected additional stress of teaching, student-teachers’ coping strategies, the impact of their Internship, and subsequent psychological distress.

8.3 Research Questions

8.4 Psychological Distress

From the literature reviewed in Chapter 3, since depression is twice as common among females (http://www.florey.edu.au/the-brain/brain-disorders/depression/), and the majority (77%) of the student-teachers in the study was female, psychological distress was expected to be prevalent among student-teachers. The literature also reported that psychological distress was greater among university students than in the general population (Stallman, 2008; Van Yperen & Hagedoorn, 2008). Thus, this finding was also expected.
There were several ways in which the prevalence of psychological distress was examined in order to answer the first specific research question, as shown in the following discussion of the findings related to the first research question.

**Research Question 1: What is the extent of psychological distress experienced by contemporary final year Australian primary school student-teachers?**

Student-teachers’ psychological distress matched the research findings about the general population. The Australian population-health trend study (Begg et al., 2007) predicts that, by 2023, the prevalence of depression and anxiety in the general population is expected to remain at 4.5% of the total burden for disease in this country. Mental disorders in the community contribute to loss of productivity through disability, and the burden of disease study by the Australian Institute of Health and Welfare predicts that females will continue to be most affected, but as also found in this study, most primary school student-teachers are female.

To explore the prevalence of psychological distress among Primary School student-teachers in Week Three of their final year of a four year undergraduate Bachelor of Education degree, first, measures of their depression, anxiety and stress were obtained. Second, their psychological distress was compared with the general population, and third, the extent to which they were depressed, anxious or stressed at clinical levels was examined. Finally, student-teachers’ qualitative responses were explored to ascertain support for the responses provided to the DASS depression, anxiety and stress items.

**8.4.1 Student-teachers’ psychological distress at Time 1**

As the descriptive statistics make clear, there is compelling evidence [depressed (12.4%), anxious (14.3%) or stressed (11.4%)] to suggest that student-teachers were psychologically distressed at Time 1. Male student-teachers were less psychologically
distressed at the beginning of their fourth year of their B.Ed., than female student-teachers. Overall, both male and female student-teachers’ psychological distress, when measured quantitatively by clinical assessment tools included in the three Well-being Questionnaires, was similar to that of the general population.

Statistical findings in this study revealed that the primary school student-teachers were less psychologically distressed than other university students represented by the literature. For example, Stallman (2008) reported that 53% of university students were psychologically distressed, and Chaplain (2008) found that 46% of secondary school student-teachers considered themselves to be very or extremely stressed by teaching. Student-teachers in this study were more likely to agree that they were enjoying life at the beginning of their final year of their undergraduate degree.

Mean scores and standard deviations that generally fell within the expected ranges for descriptive statistics, but scores for depression and anxiety were skewed at Time 1. The means and standard deviation scores for the three subscales, ranging from 0 – 4 for depression (Mean .58; SD .61), anxiety (Mean .50; SD .57) and stress (Mean 1.07; SD .74) showed that the DASS depression and anxiety items applied to few of the student-teachers at Time 1. Research has found significant levels of psychological distress in teachers, for example, as shown in a large Western Australia sample of 789 secondary teachers (Tuettemann & Punch, 1992), and student-teachers (Chaplain, 2008).

Those findings were not replicated by the statistics in this study. However, thematic analyses of the qualitative results obtained from the responses provided a broader picture. Questionnaire 1 findings indicated that at Time 1, student-teachers were more likely to be, or have been, stressed. Some student-teachers wrote about their past psychological distress, and revealed that they had previously suffered from, and been treated for, depression or anxiety disorders.
Thus a key finding is that, although the statistical measures showed that student-teachers did not seem to be unduly depressed or anxious at Time 1, the self-reported qualitative reports revealed a different picture for stress which was not fully captured simply by Likert-scale responses to the DASS questionnaire items. Some student-teachers were anxious and stressed by personal and professional demands, such as the challenges of managing a disabled family member when studying, and the strain on personal relationships due to long hours spent completing university assignments.

8.4.2 Student-teachers’ psychological distress at Time 2

Student-teachers’ concerns, as anticipated from the literature indicating that the transition from student-teacher to teacher is expected to be stressful (Campbell & Uusimaki, 2006; Sumsion & Thomas, 1999), exacerbated as they approached the Internship. Their average mean scores for psychological distress increased between the beginning of the year (Time 1) and the Internship (Time 2). Mean scores for depression increased from $T1 = .57$ to $T2 = .68$, anxiety scores increased from $T1 = .50$ to $T2 = .60$, and stress scores increased from $T1 = 1.09$ to $T2 = 1.37$. Qualitative data obtained from the questionnaires supports these findings. Student-teachers had written in the questionnaires that they felt very stressed prior to their Internships.

8.4.3 Student-teachers’ psychological distress at Time 3

No quantitative data was obtained during the Internship, but feedback from Cluster Group meetings indicated that student-teachers felt less psychologically distressed at Time 3. They mostly reported positive engagement with their Mentor Teachers. Their feedback at Time 3 was positive, and reflected optimism. They said they were less stressed than they had expected to be prior to the Internship. These findings support the Australian government emphasis that teacher training should focus on mentoring (Brownlee, 2003; Department of Education Science and Training, 2002).
However, not all student-teachers were at these Cluster Group meetings, as 13 were interstate or overseas for their placements.

8.4.4 Student-teachers’ psychological distress at Time 4

Average mean scores for psychological distress decreased post Internship (Time 4). Depression decreased (Mean Score T2 = .68 to T4 = .35), anxiety decreased (Mean Score T2 = .60 to T4 = .38), and stress decreased (Mean Score T2 = 1.37 to T4 = .91). The post Internship scores were statistically significant (p < .05) between Time 1 and Time 4 for depression, and between Time 2 and Time 4 for stress.

8.4.5 Student-teachers’ psychological distress compared to the general population

The findings make it clear that Australian university students who were also student-teachers were as depressed, anxious and stressed as the general population. The literature makes it clear, as 2% of American university students who had depressive and/or anxiety disorders also had suicidal thoughts, and depression was found to be a contributory cause of death among doctors, engineers and teachers (Eisenberg, Gollust, Golberstein, & Hefner, 2007; Lindeman, Läärä, Vuori, & Lönnqvist, 1997), so there is good reason to believe that the impact of psychological distress, prevalent among Australian (Stallman, 2008) and other university students (Dahlin, Joneborg, & Runeson, 2005), and student-teachers (Chan, 2002) is serious. The data analyses makes it clear that some Australian university students who were also student-teachers, were depressed, anxious and stressed.

8.4.6 Clinical levels of student-teachers’ psychological distress

Consistent with the literature, the DASS was used to measure university students’ psychological distress. As it was also expected that, in this study, some student-teachers’ may also require professional support for potential impairment, available
resources were highlighted to them at the outset (Appendix C: “Potential risks to you”).

The findings in this study add to the literature in which the DASS was used to measure university students’ psychological distress. The DASS indicates levels at which people with depression, anxiety and stress fit within a normal, mild, moderate, severe and extremely severe range. The DASS scores in this study are understood in terms of clinical ranges provided by the test developers “to further the process of defining, understanding, and measuring the clinical significant emotional states usually described as depression, anxiety and stress” (Lovibond & Lovibond, p. 1).

At the beginning of their final academic year (Time 1), 12.4% of the student-teachers were mildly or moderately depressed, 13.3% were more than normally anxious and 11.4% were stressed to mild or moderate levels. One student-teacher even met the criteria for extreme anxiety. Student-teachers’ comments on Q1 referred to the stress many felt, and they provided a variety of reasons. For example, student-teachers wrote about their “ongoing battles” with depression, receiving “medication and psychology for two bouts of depression”, and feelings of anxiety.

Research states that clinically significant conditions are characterized by alterations in thinking, emotions and behavior associated with impaired functioning (WHO, 2002). The literature reports that people who have already experienced mental health problems, including previous episodes of depression, are potentially at-risk of greater health problems in the future (WHO, 2005), stress is known to contribute to anxiety and depression (Parker & Fletcher, 2007), affected university students are likely to suffer impairment and require attention from health-care professionals (Wong et al., 2006), and student-teachers will enter a profession known to be stressful and where rates of depression are high (Wilhelm et al., 2004). Thus, student-teachers’ depression, anxiety or stress could constitute a serious health concern for affected individuals, and
impact on their functioning, which has implications for educational institutions and employment authorities.

8.5 Psychological Distress and Personality

The following discussion of the findings about whether or not student-teachers’ personality characteristics impacted on their perceptions of stress, anxiety or depression related to the second research question.

Research Question 2: Are primary school student-teachers’ personality characteristics associated with the psychological distress they experience?

8.5.1 Student-teachers’ personality characteristics

Morrison and O’Connor (2005) found that university students’ anxiety was triggered by the way they responded to stressful situations. McManus, Keeling, and Paice (2004) found that university medical students’ personality characteristics were associated with perceptions about workload and stress. Greek primary school teachers’ emotional exhaustion was also predicted by their personality characteristics (Kokkinos, 2007), and depression has been linked to aspects of personality (Bagby, 2008). As teaching may appeal to people with particular personality characteristics, especially extroverts and those who are conscientious, it was expected that student-teachers also aspire to perfection in their academic achievement and Internship, thus their personality may be related to psychological distress.

Previous personality research supported a three-factor structure from the Ten Item Personality Inventory (TIPI) (Gosling et al., 2003). Therefore, it was expected that these factors, conscientiousness and emotional stability (or neuroticism), would correlate positively with psychological distress, and extroversion would negatively correlate with psychological distress.
Means for the personality items, reported in the descriptive statistics (Table 6.11), indicated that most student-teachers in this study agreed that they were dependable and self-disciplined (Mean 5.74; SD .96), personality characteristics associated with being conscientious, and extroverted, (Mean 5.49; SD 1.0), not anxious or easily upset (Mean 3.69; SD 1.70), personality characteristics associated with being emotionally stable. However, because the Cronbach’s alpha values did not support the reliability of the items, the TIPI three-factor structure could not be reproduced.

It was not possible to make the anticipated links between student-teachers’ conscientiousness, emotional stability and extroversion, and their psychological distress. However, in order to answer the research question, as the factor analyses resulted in two factors, consisting of a combination of personality characteristics, analyses were conducted using these factors, and correlations revealed one statistically significant relationship between anxiety and the Emotional Strength factor (r = .28). Thus, more *emotionally strong* student-teachers were also least anxious.

Regression analyses revealed that the presence of both student-teachers’ Emotional Strength and Mental Strength decreased their post Internship stress. That is, for those student-teachers who remained in the study post Internship, the combination of extroversion, enthusiastic and calm behaviour (*emotionally strong*), and self-discipline, reserved and quiet behaviour (*mentally strong*) contributed to their pre Internship (Time 2) stress being reduced after their Internship (Time 4). A possible interpretation for this is that student-teachers who were more self-disciplined, less reserved, and more organised (*mentally strong*), and enthusiastic, calm and not anxious (*emotionally strong*), were more able to manage the stress associated with professional demands of the Internship. Personality was expected to predict psychological distress (Bakker et al.,
2006), but in this study, as outlined in Chapter 5, personality characteristics could not be discretely measured.

8.5.2 Mastery

Factor analyses revealed a single mastery factor in this research. Correlational analyses revealed a statistically significant relationship between depression, anxiety and stress with mastery ($r = .39$, .37 and .36 respectively). Lack of mastery may erode self-concept (Pearlin et al., 1981), therefore it was expected that some student-teachers, unable to feel they had mastery over their Internship teaching performance, may be more vulnerable to the demands of the profession. Further, regression analyses revealed that student-teachers’ mastery predicted a decrease in anxiety between Time 1 and Time 4, and stress between Time 1 and Time 2. Student-teachers who felt more able to master the demands of their Internship, and other stressful events, were likely to be less psychologically distressed.

8.6 Psychological Distress and Personal Demands

Personality characteristics (Jiang, Sato, Hara, Takedomi, Ozaki et al., 2003), and mastery (Warmerdam, van Straten, & Cuijpers, 2007) have also been associated with personal demands. Student-teachers’ demographic profiles (gender, age range and education) were used to answer the third specific research question.

Research Question 3: What personal demands do primary school student-teachers experience?

From the literature pertaining to student-teachers engaged in practice teaching, it was anticipated that both males and females, including mature-aged females, would participate in the study and levels of psychological distress would be different between males and females. (Brember et al, 2008, Campbell & Uusumaki, 2006, Chan, 2002,
Chaplain, 2008, Maguire, 2001). To examine these phenomena in more detail, the significant findings in terms of associations between levels of depression, anxiety and stress, on the one hand, and the demographic variables, gender and age, included as a baseline subject variable, are discussed. Findings about psychological distress and education, on the other, are also discussed.

Relationships between personal demands related to living arrangements, study and paid work demands are then discussed. These categorical demand variables included student-teachers’ marital status, living arrangements, that is, if they lived at home with parents or a partner, were responsible for raising children, the age range of any children, single parent status, and if they shared accommodation with others, or lived alone. Descriptive statistics also illustrated student-teachers’ financial responsibilities, in particular, how they paid for their university education, including paying their fees in advance, or electing repayment through the taxation system upon gaining employment.

Quantitative results did not support the university student literature (Helmers et al., 1997) linking personal responsibilities with greater levels of psychological distress, but the qualitative data revealed student-teachers’ significant financial responsibilities. The student-teachers were aged mostly in their early twenties, female, and lived at home, a protective factor in the literature (Eisenberg et al., 2007), and had achieved at least a Credit (65% - 74%) average in their previous university education degree studies. There was some evidence to conclude that there were significant associations between student-teachers’ age range, gender, education or their responsibilities, referred to as personal demands, and their perceptions of psychological distress, the Internship or their coping strategies.
8.6.1 Gender

In the general population, females have higher levels of depression, anxiety and stress than males (WHO, 2001), as do female teachers compared to male teachers (Kovess-Masféty, Rios-Seidel, & Sevilla-Dedieu, 2007). In an Australian study with university students, gender was of no significance (Stallman, 2008), but in this study, student-teachers’ psychological distress differed significantly ($p < .01$) according to gender. Being female was significantly correlated with higher mean levels of psychological distress.

These results, shown previously in Chapter 6, were consistent with other studies of psychological distress among university students. For example, in Sweden, Dahlin, Joneborg and Runeson (2005) found that 16.1% of female university medical students were depressed compared with 8.1% of male students, and the students had higher depression rates than the general population. In this study also, more female student-teachers than male student-teachers were psychologically distressed.

8.6.2 Age

To make comparisons between the student-teachers in this study and the general population, an age range was used to identify psychological distress, rather than single ages, as most student-teachers in this study were in their early twenties. Fewer than 13% of the total number of student-teachers were more than 36 years of age [GenX (36 - 45 years of age) and Baby Boomer ( > 46 years of age)], thus, the majority ($N = 70$) of student-teachers fitted the GenY (20 - 35 years of age) category. Analyses of means and standard deviations for psychological distress, broken down by age, showed a trend towards older (40 - 49 year age-bracket) student-teachers being more psychologically distressed.
The majority of student-teachers were in the 20 - 29 year range, and they were more stressed than anxious or depressed. However, fewer (10.22%) of these student-teachers were stressed than the general population (11.19%). This pattern was also repeated in the 30 - 39 year age group. In an Australian university health service study, psychological distress was higher among university students who were older than 24 years of age (Stallman, 2008). In this study, no student-teachers were older than 49; however, in that 40 - 49 year age-group, student-teachers were more depressed and anxious and stressed than the general population.

8.6.3 Education

Most student-teachers in this study had completed Year 12, the final year of Australian school education. The majority scored Overall Position (OP) results ranging between OP 4 – OP 18. The largest proportion achieved an OP in the OP 8 – OP 13 range (35%). They were successful in their previous three years of academic study, with most obtaining at least a Credit (65% - 74%) average in their previous academic year.

Previous education was not statistically related to student-teachers’ psychological distress. The only significant relationship was a positive association between GPA (Grade Point Average) in 3rd year and relationship demands. That association may be due to the time they spent on to study and their Internship preparations which impinged on their family responsibilities.

Student-teachers’ comments on the questionnaires reflected that they also felt stressed because they wanted to continue to achieve well academically in their final year of academic study. Relationships to the independent demographic variables personal responsibilities, including living arrangements, study and paid work demands. Student-teachers reported that their personal responsibilities, including family commitments, financial responsibilities and paid hours worked, were demanding. Student-teachers’
responsibilities for others, or just themselves, and whether or not these demands, and others, impacted on their psychological distress was explored. Their responses were primarily associated with financial responsibilities including accommodation, car and phone costs, and their university fees.

8.6.4 Living arrangements

With regard to understanding the nature of psychological distress and living arrangements, three factors were identified: being single, being supported by family and living with a partner. Being in a relationship, married or living with a partner are recognised as potential protective factors against psychological distress, and associated with better mental health outcomes for university students (Stallman, 2008; Tyssen et al, 2001).

However, living at home with parents is recognised as stressful (Muirhead & Locker, 2007). In this study, 43% of the student-teachers lived with their parents, and they wrote about being supported by their families, thus it was expected that being single would correlate with lower psychological distress. Despite this, other factors appear to influence their anxiety because being single was significantly associated with anxiety ($p < 0.05$), and marital status had no effect on student-teachers’ depression or stress.

Statistical findings did not support any association between living arrangements, a buffer effect of living with family, or living with a partner, and student-teachers’ psychological distress. Three student-teachers were single mothers, and another 16% were responsible for raising children, but these responsibilities were not significantly associated with being psychologically distressed either.
8.6.5 Study and paid work demands

Student-teachers in Australia have to pay university fees, but there is an option to repay their university fees upon gaining employment. Many also work part-time, and some even work full-time whilst completing their academic study, and there is a known relationship between debt, academic performance and stress (Ross et al., 2006). Although approximately 89% of these student-teachers worked in paid employment, they reported being financially stressed. Inability to continue this work whilst undertaking an Internship presented difficulties for those with personal debts to repay. These student-teachers have lived through the global financial crisis, and employment for Australian primary school teachers is not guaranteed.

The open questions in the study shed further light on the issues of stress. They wrote of being stressed due to car, mortgage, rent, telephone and internet costs, child care, health care, food, and electricity and clothing expenses. In addition to these debts, 10% of student-teachers were in debt due to credit card and other personal loans. Stress related to being unable to continue existing employment when committed full-time to the Internship. A large proportion (88%) worked at the same time as studying full-time, and of these, 28% worked 6 - 20 hours a week, 20% worked 11-15 hours. Others worked less, between 5 –10 hours per week, but the requirement to work in paid employment while studying full-time was reported to strain relationships.

As predicted from other studies among university students (Dahlin & Runeson, 2007), in this study, there was also an association between financial concerns and depression. They wrote about feeling stressed due to their fears about obtaining a teaching position after the Internship. These fears may have contributed to the correlations found in this study between depression, anxiety, and student-teachers’
intention to pay their fees through the Australian taxation system once they were employed.

Being female, single, having to pay university fees, and having financial commitments were psychologically distressing for student-teachers. Being unable to work in paid employment for the duration of their Internship also contributed to their psychological distress.

8.7 Psychological Distress and Professional (Internship) Demands

Student-teachers are required to respond to challenging professional demands (Facchinetti, 2010), which is an ongoing dilemma for Australian teacher education (Dyson, 2005). They engage professionally in practice-teaching which can be demanding (Sumsion & Thomas, 1999). The qualitative findings of the present study illustrate the extent of student-teachers’ initial concerns prior to the actual Internship, extending previous research into student-teachers’ psychological distress and the practical demands of teaching experiences (Chaplain, 2008).

Research Question 4: What professional demands do primary school student-teachers associate with their Internship?

There are increasingly complex professional standards student-teachers must meet in order to be deemed competent (Marsh, 2010). Stress related to aspects of teaching is not a new phenomenon, and teaching practices known to be stressful include the challenges of meeting the various educational authority requirements, rapid changes in education, student behaviour management issues, and workload (Easthope & Easthope, 2007). Teachers have to cope with a raft of new and challenging education initiatives (Facchinetti, 2010), and these responsibilities apply to student-teachers during their Internship (Power & Berlach, 2005).
From the literature, workload and behaviour management were significant predictors of wellness among UK student teachers (Chaplain, 2008), and-Australian student-teachers had found the Internship stressful (Sumson & Thomas, 1999). The findings, based on the Survey of Practicum Stresses (SPS) developed by D’Rozario and Wong (1996), indicated student-teachers’ confidence about being evaluated by their Mentor Teacher and using the technology, but, consistent with the literature, they were concerned by challenges they may encounter, such as workload, school students’ behaviour and balancing their personal and professional life commitments.

Most student-teachers were part of GenY, and had grown up in the digital age, thus it was little surprise that technological issues were of little concern. Prior to their Internship they worried about time management, and managing school students’ behaviour, and their psychological distress was highest pre-Internship. The data confirmed that many of the student-teachers’ concerns were resolved in the field, as revealed in their Cluster Groups meetings, and DASS21 scores were lower for those student-teachers who remained in the study post-Internship.

8.7.1 Psychological distress and the Internship at Time 1

Depression related to unemployment is not new, although the literature is primarily focussed on middle-aged workers (Marcotte et al., 1999), but the majority of student-teachers were in their early twenties. These student-teachers were focussed on gaining employment after their Internship, therefore, it was expected that personal and professional demands would contribute to psychological distress, and that this would increase in relation to their full-time six-week teaching Internship. Student-teachers’ responses indicated that, at Time 1, many were financially stressed. They recognised that the Internship meant that they would have to discontinue pre-existing paid work later in the year, in order to complete six weeks of unpaid teaching practise.
Student-teachers strongly agreed that they intended to achieve the best possible rating (an S1) in their Internship, and that they were stressed about gaining employment as a teacher afterwards. At Time 1, they reported feeling extremely stressed about factors such as how they would manage school students’ behaviour in the classroom, but the advances and changes due to technology that has worried older teachers was of no concern (Russell & Bradley, 1997). The GenY age group are digitally savvy (Tapscott, 1998). Most student-teachers (81%) fitted this age group, being between 20 - 30 years, and, having grown up with computers, they were confident about using technology at their Internship.

8.7.2 Psychological distress and the Internship at Time 2

Teaching is a highly complex profession and one might expect the demands to grow in response to changes in society, as well as changes in teaching (Faccinetti, 2010). From Owen, Kos and McKenzie’s (2008) report for the Australian government into teacher workforce issues, one might anticipate that quality teacher education and the Internship equip student-teachers to deal with, and contribute to practical teaching demands. However, Power and Berlach (2005) presented student-teachers’ negative Internship experiences, based on the issues such as the overwhelming workload. University assignment workload may contribute to psychological distress, and this could be predicted to increase pre Internship, when student-teachers are likely to be stressed about preparing for their Internship.

It is a program requirement that these student-teachers complete a Capstone Program immediately prior to their Internship; a time when other university students are on their semester break. Notwithstanding the importance of the Capstone Program, with little time to prepare for the professional teaching experience, student-teachers in this study complained that holding it just before the Internship was very stressful. They
blamed the timing of the Capstone Program by the University for contributing to their existing emotionally fragile state, because it left them no time for planning. Like Rantanen, Kinnunen, Feldt and Pulkkinen’s (2008) study of the relationship between work and family conflict, some student-teachers also suggested that the work and time required preparing for their Internship contributed to the breakdown of their relationships with partners and with parents.

In this study, at Time 2 (pre Internship), student-teachers were apprehensive about their future, and felt stressed about getting a job. They reported that their performance at the Internship was predictive of future success in obtaining a teaching position. Some student-teachers had experienced poor communication with their Mentor Teachers in their pre Internship meetings, thus by Time 2, they were fearful about their relationships with their Mentor Teachers, and concerned that adverse feedback about their performance would impact on the teaching practice results used in interviews with the teacher registration authorities.

There was a sense of desperation in some of the comments by student-teachers reporting how stressed they were due to the financial sacrifices they had already had to make in order to study the Bachelor of Education degree, and a sense of feeling overwhelmed by the commitment required of them in studying to become a teacher. Some student-teachers who had taken out personal loans, had made plans to make repayments from their teaching salary, so for them, obtaining a teaching position was vital.

From information provided on questionnaires, the degree to which Mentor Teachers and the University Internship Co-ordinator were perceived as supportive pre Internship was variable. Some were stressed because they did not know what was
expected, or concerned that too much would be expected of them in the limited time available, and others were fearful about managing the school students’ behaviour.

8.7.3 Psychological distress and the Internship at Time 3

As expected from Sinclair, Trimmingham-Jack and Pollnitz’s (2006) in-depth interviews, conducted with Australian teacher educators, the students were placed in supportive situations in schools to complete their Internships. By Time 3, student-teachers’ perceptions when they were interviewed by the University Internship Coordinator during the Internship, changed markedly. In their Cluster Group meetings, student-teachers discussed many positive aspects of their Internships, and their overall mood was enthusiastic. They were very keen to make a positive impression, and had mostly developed good relationships, felt supported and were comfortable receiving feedback from their Mentor Teachers.

Whilst student-teachers found many challenges in managing school students’ behaviour, the Internship experience was a very positive experience, behaviour management was no longer of great concern, and their earlier fears about lack of time to prepare because of the Capstone Program had dissipated.

Although the workload was considerable, student-teachers reported that their motivation outweighed the demands of teaching. They indicated that they enjoyed learning as much as they could during the Internship, and engaging in a variety of additional extra-curricular activities. The advantages of participation in sports days, parent-teacher meetings, and a lunch-time drama club, whilst exhausting, was outweighed by the opportunity to be completely responsible for teaching their class, findings consistent with Bakker and Demerouti’s (2007) JD-R theory which is included in the theoretical framework developed for this thesis. They also reported that there
were many resources made available to them at their Internship schools, which contributed to reduced psychological distress.

8.7.4 Psychological distress and the Internship at Time 4

Over time, as expected, the Internship impacted on student-teachers’ psychological distress, as shown in Table 6.24. There was a significant mean decrease in depression between the baseline and post Internship scores \((p < .01 \text{ Sig. (two-tailed)})\), and stress between pre- and post-Internship score \([p < .01 \text{ Sig. (two-tailed)}]\). Whilst anxiety scores also increased pre-Internship and declined post-Internship, the changes were not statistically significant. Student-teachers who were less confident (Ease) with the Internship were more anxious before \((\beta = .22, p<.05)\) and during their Internship \((\beta = .43, p<.01)\). Decreasing anxiety was predicted if the student-teachers felt more at ease with the Internship demands, but there was no significant difference in their anxiety throughout the Internship.

The Internship impacted most on student-teachers’ stress from pre- to post-Internship \([p < .002 \text{ Sig. (two-tailed)}]\). The difference between stress pre and post Internship was larger than between the baseline and post Internship. However, the difference in scores was based on 93 student-teachers pre Internship and only 39 student-teachers post-Internship. Regression analyses showed no impact of the specific Difficulties variable.

Together, the quantitative and qualitative findings describe the extent to which student-teachers felt able to manage the professional demands of their Internship. As expected, student-teachers psychological distress did increase as they approached the Internship. Student-teachers who felt more comfortable about teaching outside their expertise, being evaluated, receiving feedback and discussing their stress were least anxious. These factors (Ease), negatively predicted student-teachers’ psychological
distress. Thus the time student-teachers spent in schools as Interns might be expected to
improve their ability to cope with the demands on them. However, other factors may
impact on their ability to cope with demands particular to the teaching profession, such
as disruptive behaviour.

8.8 Student-Teachers’ Coping Strategies and Resources

An exploration of the literature related to the stress process (Selye, 1982), and
coping strategies (Pearlin et al., 1981) included the impact of various evidence-based
coping strategies. Among these were Beck’s cognitive therapy (2005), mindfulness
(Rosenzweig et al., 2003), computerised and other self-help (King, 2005; Proudfoot,
2004), sleep deprivation (Pilcher & Huffcutt, 1996), stress management programs
(Zetterqvist et al., 2003), and exercise (Mead et al., 2009), as well as barriers to seeking
help (Tija, Givens, & Shea, 2005). The key findings about student-teachers’ personal
coping strategies, from the questionnaire data collected on three occasions, and
qualitative data obtained at mid-Internship Cluster Group meetings, are now discussed.

Research Question 5: What coping strategies and resources do individual primary
school student-teachers use?

Research has found that factors contributing to psychological distress among
international university students in Australia included poor social support, financial
worries, accommodation issues, and dysfunctional coping strategies (Khawaja &
Dempsey, 2007), that one out of every four beginning Australian teachers resign in their
first five years of teaching (Hartsuyker, 2007), teaching practice is stressful, and
professional demands can lead to attrition, stress and burnout among both primary and
secondary teachers (O’Brien, O’Keeffe, & Goddard, 2007).

The literature identifies depression is increasing world-wide (WHO, 2001),
practicum stress is predictive of psychological distress in student-teachers (Murray-
Harvey et al., 1999), and they are entering a profession known to be stressful (Kyriacou & Kune, 2007), with high rates of attrition (Wilhelm et al., 2000). However, a major determinant of well-being derives from successful implementation of programs based on evidence-based strategies including approaches that can be accessed by individuals as self-help, including materials available as books, on-line programs, and other web-based self-help programs, based on CBT (Kaltenthaler et al., 2006), mindfulness (Rosenzweig et al., 2003) and exercise (Lapshin et al., 2006). Some universities provide free access to counselling with mental health professionals, and Medicare Australia facilitates access to free or subsidized services from psychologists for emotionally distressed eligible Australian residents to manage depression, anxiety and stress, whether arising from personal or work-related factors.

8.8.1 Student-teachers’ coping strategies

The average age of student-teachers in this study was 25 (GenY). At Time 1, they reported financial and Internship concerns. While they used various strategies and practices to cope with personal issues, many sought comfort and understanding from family when distressed, probably explained in this study by the fact that the majority still lived at home with their families.

To understand the nature of student-teachers’ coping strategies, items from the Brief COPE, a coping tool to assess how people respond to stressful events in their lives (Carver et al., 1989), were incorporated with other strategies of interest, as identified from the literature, into a new scale. This included cognitive behavioural strategies to facilitate the identification of irrational, anxiety-provoking thoughts, and challenge negative automatic thoughts and dysfunctional underlying beliefs (Beck, 1979), problem solving and self-distraction, strategies collectively known Cognitive Behaviour Therapy (CBT) (Parslow et al., 2006; Treatment Protocol Project, 2004), mindfulness-
based strategies (Harris, 2006), alcohol (Akvardar et al., 2004), family and social support (Chan, 2002), self-help web-based resources (Christensen et al., 2002; Jorm et al., 2005), yoga, relaxation and exercise (Lawlor & Hopker, 2001), and mental health counselling, available through the university, or, as an Australian government resource, to all members of the population. However, despite the evidence from previous research literature that cognitive behaviour and mindfulness-based strategies were found to contribute to reduced levels of psychological distress among university students (Collard, Avny, & Boniwell, 2008), in this study, only professional support was associated with decreased anxiety, whereas negative coping strategies, including withdrawal and avoidance, were linked to student-teachers’ depression.

8.8.1.1 Cognitive behavioural (CBT) and mindfulness strategies

Previous research has focused on the benefits of cognitive behavioural and mindfulness strategies programs favoured by university students (McKendree-Smith, Floyd, & Scogin, 2003; Sreeramareddy et al., 2007). Programs are not yet offered by universities specifically as part of the pre-service teacher training curriculum, but at Time 1, student-teachers in this study used some mindfulness and CBT strategies. For example, they agreed that, if stressed, they would “do something about the situation” (a CBT problem solving strategy), “look for something good in the situation”, (a CBT positive self-talk strategy), and “remind myself to focus on the present” (a mindfulness strategy).

Some student-teachers use a variety of CBT strategies to manage diagnosed mental health conditions. For example, in writing about his previous bouts of depression, one student-teacher discussed coping with the help of anger management and relaxation strategies. Student-teachers diagnosed and treated for depression by health professionals have found the strategies effective. The data confirmed the extent to which student-
teachers agree with the research that positive self-talk and cognitions are effective, and also that some believe spirituality is efficacious for managing their psychological distress.

8.8.1.2 Self-help

This research was conducted with student-teachers in 2009, and at that time, they were likely to share their professional concerns with friends. However, a fundamental technological revolution is evident world-wide, and since then, these GenY’s are exposed to an even greater usage of on-line transformation of social connectedness. As at January 2011, Facebook reportedly had more than 600 million active users (http://en.wikipedia.org/wiki/Facebook). Yet, despite the availability of web-based programs shown by research as effective for well-being, and a free Australian internet-based CBT program designed to treat and prevent depression especially in young people (Christensen, Griffiths & Korten, 2002), few in this cohort of mostly GenY student-teachers, the generation known for their internet use, looked at web-sites, or self-help books to cope with their stress. Those who did look up web-sites reported that it was helpful to read about others with similar experiences, and their anxiety and stress was reduced.

8.8.1.3 Disengagement

Some student-teachers agree that their coping strategy is to “pretend it hasn’t really happened”. However, given that depression is increasing world-wide, that practicum stress is predictive of psychological distress in student-teachers, that they are entering a profession known to be stressful, with high rates of attrition, this strategy seems unlikely to contribute to long-term well-being.
8.8.1.4 Drinking alcohol and exercise

Exercise has been linked to reduced depression and anxiety (Larun et al., 2006), and in this study, depression decreased among student-teachers who exercised, and were relaxed during their Internship. As both alcohol and exercise were included in one item for statistical analyses, whilst the quantitative findings were not definitive, qualitative findings indicated that exercise was important to student-teachers as a method for reducing their anxiety and stress.

In this study, student-teachers refer to various exercises and activities which do contribute to their well-being. Both male and female student-teachers list sports and exercise, including karate, horse riding, and working out at the gym or with a personal trainer, as positive coping strategies. Austin, Shah and Muncer’s (2005) study of UK secondary school teachers’ stress and coping strategies indicated that, although relaxation and social support were popular, the only successful stress management strategy was exercise. As many student-teachers used exercise as a coping strategy, these findings have positive mental health implications. Further, unlike other university students (Flynn, 2000), most student-teachers agreed that they were least likely to drink two glasses of alcohol daily to cope.

8.8.1.5 Emotional release

Findings from the questionnaires indicated that at Time 1, student-teachers in this study were most likely to seek comfort and understanding from their families. Female student-teachers frequently mentioned spending time with others, a feature Chan (2002) also mentioned in his study with student-teachers. In addition to emotional support from family, and talking to friends about their worries, student-teachers also referred to their religious practices as coping strategies to get them through their Internship experience, a factor that had not been considered in preparing the study.
Repeated measures MANOVAs, illustrated in Figure 6.2, show that, with the exception of emotional release student-teachers used the other four new coping strategy factors, identified following exploratory factor analyses (EFA), less at Time 2 (pre Internship) and Time 4 (post Internship). It appears that student-teachers use CBT/mindfulness, self-help, disengagement, exercise and drinking alcohol less as they approach their Internship, and during the Internship, as shown by Time 4 measures, but use of emotional release remains relatively constant.

8.8.2 Student teachers’ professional coping resources

Murray-Harvey, Slee, Lawson, Silins, Banfield, and Russell’s (2000) analysis of Australian student-teachers’ revealed coping mechanisms, including: 1) personal coping through positive cognitions, physical activity and relaxation, drinking and eating, 2) humour, and time management; self-awareness, breathing and relaxation, 3) social coping by turning to family and friends to reflect, debrief and/or to defuse their stress; 4) professional curriculum knowledge, self-management, organization and support from their school supervising teacher, other student teachers, and their university. In this study, those strategies that had not already been assessed using the personal coping scale were incorporated into a professional resources scale (PRS), devised for this study. As poor sleeping habits are associated with psychological distress (Christensen et al., 1999), student-teachers’ sleeping habits, together with support available from health service providers, their University Internship Co-ordinator, peers, and existing stress management techniques were also included among resources identified for coping with the Internship.

Despite access to psychological support being available in the community, and additional access to counselling which is not available to the general public, being available to student-teachers through the university health services, despite their levels
of psychological distress, only a minority of them sought support from these professional resources. Sleep deprivation is one of the factors linked to university students’ mental health outcomes (Werch et al., 2007). Student-teachers’ expected their sleep to worsen as they approached their Internship. For example, one student-teacher commented on the first questionnaire (Q1) that he already slept poorly, and he expected this would worsen during his Internship. Thus, addressing available support, and enhanced understanding and management of sleep habits could be important to future student-teachers’ well-being.

8.9 Student teachers’ Barriers to Seeking Help

Chew-Graham, Rogers and Yassin (2003) reported medical students’ views on seeking help were linked to stigma associated with mental illness. The perception that mental health problems may be viewed as a weakness, and fear that it may impact on subsequent career progression, could contribute to student-teachers avoiding seeking appropriate help for their psychological distress.

Research Question 6: What barriers may preclude final year primary school student-teachers from seeking help for their psychological distress?

In this study, a small proportion of student-teachers was extremely anxious, and would not seek help of any sort. Research has identified the barriers that preclude some university students from seeking help when distressed, including a lack of knowledge about mental illness (Thompson et al., 2004), and limited understanding of the implications if left untreated (Wilhelm, et al., 2003). It is possible that this perspective explained why barriers to seeking help increased prior to the Internship. It may be that student-teachers believe they must work harder to manage psychological distress by themselves, keeping their worries from others because they are fearful of being judged
adversely by others, and feel helpless about being able to do anything to change their circumstances.

The student-teachers in this study were strongly focussed on achieving an S1 rating (highest) at their Internships and did not want to harm their chances. It is possible that their personality type did not allow them to acknowledge any imperfection or that they were too psychologically distressed to recognize the seriousness of their symptoms. The findings reveal that depression, anxiety and stress increased between Time 1 and Time 2, possibly in response to increased barriers. Lack of further evidence suggests an inconclusive result, but the potential consequences for any depressed or anxious person, and this includes student-teachers, of not addressing their well-being can have serious consequences. Therefore, in view of the findings from the literature, the student-teachers’ emphasis on achievements related to their Internship, and their fear of not revealing any potential weakness that may impact adversely on their final Mentor Teacher’s report, it is incumbent on teacher educators to minimise the stigma of mental illness for future student-teachers.

8.10 Predicted Associations Between Psychological Distress and Student-Teachers’ Personal Coping Strategies

The JD-R theory identified that job stress or burnout will develop when job demands are high and resources, including personal resources, are limited (Bakker & Demerouti, 2007). However, the impact of the personal and professional (Internship) demands on student-teachers’ psychological distress may be associated with the coping strategies and resources they employ. In this study, there were assorted relationships and statistical links between psychological distress, the Internship and student-teachers’ coping strategies. Montgomery and Rupp (2005)’s theory, described in Chapter 4, suggested that teachers use either active or passive coping strategies to manage their
external stressors or personal demands, and the Demands, Coping and Wellbeing (DC-W) theoretical framework developed for this study, predicts additional coping strategies, resources and barriers which impact on student-teachers psychological distress.

Research Question 7: What relationships exist between the demands of the Internship, student-teachers’ personal and professional coping strategies and/or psychological distress?

Student-teachers’ depression, anxiety and stress scores changed over time. Their means scores on each aspect of psychological distress increased as they approached the Internship (between Time 1 and Time 2), as shown in Table 6.23, then decreased post Internship (Time 4).

8.10.1 Predicted associations between student-teachers’ psychological distress and the demands of the Internship

The fact that the scales had to be reduced meant that correlations, and regression analyses were conducted between depression, anxiety, stress on the one hand, and two Internship demand factors, five coping, and the three resource/barrier factors and each combination of time (baseline, pre- and post-Internship) on the other. Several conclusions about relationships were reached. The statistical findings in this study support the prediction that student-teachers who are more at ease about the demands of their Internship will be less anxious about it. Student-teachers’ feelings of mastery related to their Internship experience, as expected (Bradley, 2010), also correlated with lower levels of depression, anxiety and stress ($p < .01$), as shown in Table 6.17. Many of their comments prior to the Internship indicated feelings of tension, attributed to personal issues, such as financial stress in those who would be unable to continue their paid work during the six-week Internship, and professional issues including lack of
preparation time due to the capstone program, and a belief that their Internship performance was strongly aligned to their future employment prospects.

Student-teachers have also experienced bullying by staff in schools, which can contribute to discomfort (Maguire, 2001), but this was not mentioned by the student-teachers. Anticipated Internship difficulties predicted stress difference scores \( p < .05 \) between Time 1 (baseline) and Time 2 (pre-Internship). However, at Cluster Group meetings (Time 3), despite the demands of the work, the difficulties student-teachers had associated with the Internship did not impact on them, and they were instead, highly motivated. Most student-teachers attributed their positive Internship experiences to their Mentor Teachers’ support.

8.10.2 Predicted associations between student-teachers’ psychological distress and their personal coping strategies.

In this study, some statistically significant predictors associations were found from correlations between depression, anxiety and stress (psychological distress) and regression analyses.

8.10.2.1 Depression

Based on findings by Mead et al. (2009), it was expected that student-teachers who exercised would be less depressed. However, in this study, exercise was combined with drinking alcohol into one factor by the statistical processes involved in the EFA. Subsequent correlational analyses (see Table 6.17) showed an association between depression, drinking alcohol and exercise factor \( p < .05 \), disengagement \( p < .01 \), and not seeking help (barriers, \( p < .01 \)). Regression analyses (Tables 6.24 and 6.25) also confirmed the prediction that student-teachers are more likely to be depressed on each occasion (between Times 1, 2 and 4) if they use this negative cognitive behaviour
strategy of pretending nothing has happened, give up, or if criticise themselves (disengagement).

8.10.2.2 **Anxiety**

Psychological distress has been alleviated when people learn to focus on the present moment (Fletcher and Hayes, 2005), and engage in CBT strategies of positive self-talk, problem-solving and talking to others (McKendree-Smith et al., 2003). Predictably, student-teachers are less likely to be anxious ($p < .01$) if they use the CBT/mindfulness strategy (see Table 6.17), which includes the mindfulness strategy of focussing on the present (Brown et al., 2007; Limprecht, 2008), positive self-talk, taking action, and reframing one’s thoughts to become more realistic, strategies included in a CBT approach (Beck, 2005). It was expected from earlier research (Leach et al., 2006), that student-teachers’ self-help strategies would predict lower psychological distress, including anxiety, but regression analyses (Tables 6.24 and 6.25) confirmed only that student-teachers are less likely to be anxious on each occasion (between Times 1, 2 and 4) if they experience a sense of mastery ($p < .05$).

8.10.2.3 **Stress**

Emotional release, as predicted by Chan (2002), impacts on student-teachers’ stress levels. Those who offloaded their worries to friends and families release their stress, but this may be simply social behaviour common to most people, and have little impact on psychological distress, whereas drinking excess alcohol is known to adversely impact on health (Ellis, 2004). As regression analyses predicted decreased stress ($p < .05$) when student-teachers used CBT/mindfulness strategies between Time 1 and Time 2 (see Table 6.24), and some student-teachers are psychologically distressed, introducing these strategies into pre-service teacher training would be advantageous.
Coping strategies, derived from CBT to identify irrational, anxiety-provoking thoughts, and challenge negative automatic thoughts and dysfunctional underlying beliefs, (Beck, 2005) and mindfulness, or non-judgmental, present moment attention, strategies that have contributed to reduced psychological distress in the general population (Kabat-Zinn, 2003), as expected, contributed somewhat to student-teachers’ well-being. Coping using CBT and mindfulness, self-help and disengagement predicted less student-teacher stress. For example, a student-teacher commented that he used problem solving and relaxation, which are CBT strategies (Hazlett-Stevens & Craske, 2002), and in this study also contribute to understanding student-teachers’ resources for managing their psychological distress.

8.10.3 Predicted associations between psychological distress and student teachers’ coping resources

As predicted by Lorente et al.’s (2008) study, at Cluster Group meetings motivated student-teachers discussed their dedication to teaching. Their predominant coping resource for managing the professional Internship demands was the relationship they developed with Mentor Teachers. Correlation analyses revealed a significant negative association between seeking professional support, which included Mentor Teachers, and student-teachers’ anxiety. This changed after being left in charge of classes. They also developed confidence by taking opportunities to engage with parents.

They reported feeling somewhat intimidated at being observed by Administrators, such as a Deputy Principal, but relished this level of support in their practice teaching school environments. Being trusted impacted on student-teachers’ motivation to succeed, reduced their anxiety, and reinforced the potential of mentoring (Martinex, 2004) as a positive resource.
On the questionnaires, professional support also included appointments with health professionals, and student-teachers’ average scores for professional support declined across the three occasions, with post-Internship scores significantly less than the previous baseline or pre-Internship scores, indicating that they used it less. Professional support was not associated with depression or stress, but regression analyses revealed that anxiety was reduced when the student-teachers sought professional support, and were more relaxed.

Professional support, relaxation, and barriers to seeking help, the three factors of the reduced coping resources scale, each significantly contributed \((p < .05)\) to student-teachers’ well-being during their final year of pre-service training. As found by Redwood and Pollack (2007), programs incorporating relaxation training have been associated with reduced psychological distress in university students. Similarly, in this study, whilst some student-teachers were less likely to relax throughout the year, particularly during their Internship, those who did were less depressed and anxious. Thus, programs incorporating relaxation could be considered in teacher education.

Consistent with the findings by Chew-Graham et al (2003), in this study, some barriers also impacted on student-teachers’ psychological distress. Depression was predicted in student-teachers who kept their worries to themselves, and who feared judgemental responses by others if they discussed their concerns, but those who were more at ease professionally, less concerned about potential issues if they talked about their stresses, and who disengaged from stressful thoughts and behaviours, were less depressed. Those who were relaxed and comfortable seeking help if necessary, were less anxious about their Internship, whereas those who used less emotional release, and for whom there were more barriers to seeking help, were more stressed as they approached their Internship. However, post Internship (Time 4) results are interpreted
with caution, as discussed in Limitations, because of the combinations of items into the factors described, and because only 39 student-teachers remained in the study at that time.

8.11 Critique of the Research Design

The research design provided sequential quantitative data to test the seven hypotheses arising from the specific research questions in this exploratory study of student-teachers’ psychological distress, their demands and coping strategies, particularly in regard to the teaching Internship undertaken in their final year of an undergraduate teaching degree. The mixed-method data collection approach which enabled student-teachers to express their experiences in different ways was gathered through individual written responses in Questionnaires, and Cluster Group meetings. Given the mixed-method of the study, the discussion is both statistical and descriptive.

A strength of the mixed-method is that both statistical and descriptive data could be gathered from questionnaires, but both methods have limitations. A strength of the quantitative technique is that the research was repeated on three occasions, to explain changes in student-teachers’ levels of psychological distress in relation to the timing of the Internship. However, a limitation of the statistical process is that the large number of factors (13) contributing to the analyses exceeds the recommended number for a sample of this size (Gay, 1996).

Qualitative research reflected student-teachers’ feedback on issues that were not incorporated into the questionnaires, but which added depth and clarification to their responses to questionnaire items. A limitation of the descriptive process is that the researcher was dependent on recording only general feedback at Cluster Group meetings in order to maintain student-teachers anonymity.
8.11.1 Theory validation

The model of inquiry used in this research was based on the literature reviewed in Chapter 3, a new theoretical framework was developed for this thesis within a pragmatic paradigm, using a mixed method study design. This Demands, Coping and Well-being theoretical framework, based on a combination of the Job Demands-Resources Theory and the Teacher Stress Cycle Theory, was designed specifically to enhance understanding of student-teachers’ psychological distress (Morrison & O'Connor, 2005) and to discern any associations between it and other variables, using the Well-being Questionnaires and other qualitative data. It appears that the Demands, Coping and Well-Being (DC-W) theoretical framework did provide a means for exploring the predictions and gathering data to address the research questions and that it is valid.

The data highlight the foci of the theories presented in Chapter Four, and conclusions about the contribution of each is now succinctly addressed.

8.11.1.1  Job Demands and Resources theory (JD-R)

This theory, emphasising the demands on individuals associated with their work, and their available resources, was satisfactory for designing scales to explore Internship demands and the resources available to student-teachers. Even though it did not contribute to understanding depression, anxiety or stress, the main foci of this thesis, the JD-R theory contributed positively to developing an understanding of the role of professional Internship demands and student-teachers coping resources, thus it was incorporated into the new theoretical framework (Bakker & Demerouti, 2007).

8.11.1.2  Teacher Stress Cycle theory

The Teacher Stress Cycle theory introduced a focus on managing demands using coping strategies and outcomes specific to teaching. In the TSC theory, cognitive and
behavioural coping were included as active strategies, together with health and emotional practices. Resignation, wishful thinking and avoidance were referred to passive coping. All constructs were included to understand their relationships to teacher stress. This theory was a helpful basis for inclusion into the DC-W framework, as it emphasises the teaching profession, and as student-teachers experience similar professional demands when moving from the role of student to teacher during their Internship, this theory was applicable to the new framework developed to further understand the contribution of the coping strategies to student-teachers’ well-being.

8.11.1.3 **Cognitive theory**

This theory focusses on strategies into challenge irrational thoughts and beliefs through disputing cognitions (Ellis, 1969). It provides an additional means of understanding student-teachers psychological distress and use of evidence-based coping strategies in the DC-W theory.

8.11.1.4 **Mindfulness theory**

Cognitive behaviour and mindfulness strategies, based on present moment awareness, are effective in reducing psychological distress (Kabat-Zinn, 1994). These coping strategies were found to be available through various self-help approaches (den Boer et al., 2004; Gregory et al., 2004; Malathi & Damodaran, 1999; Marks et al., 2003; Mead, MacDonald, Bower, Lovell, Richards et al., 2005; Simon, 2004), and in programs provided to university students, predominantly in medical faculties, therefore they were included in the new theory. Subsequent exploratory factor analyses resulted in one mindfulness item being excluded completely from the new factors, thus it was not possible to link mindfulness-base strategies independently to the statistical outcomes.
The Demands, Coping and Wellbeing (DC-W) theory has depression, anxiety and stress, components of student-teachers’ psychological distress, as its focus. Student-teachers’ psychological distress is regarded as important because it can be potentially serious for the individual, and may result in sickness and absence from work. This framework is relevant to the study since some associations can now be drawn that extend the literature to state that some primary school student-teachers are depressed, anxious or stressed prior to exposure to teaching.

The personal demands and responsibilities in student-teachers’ daily lives exacerbate their distress. By inclusion in the framework, personal demands became a focus together with the expected professional demands associated with teaching and the Internship. Whilst the literature found that teaching practice was a major determinant in well-being, this framework supported the contribution of research data to explore hypotheses regarding primary school student-teachers’ psychological distress. The data demonstrates that primary school student-teachers are depressed, anxious and/or stressed, and this increases as they prepare to undertake a teaching Internship. Due to attrition in this research, it is not possible to be definitive about the impact of these professional demands on their psychological distress after their Internship.

The literature provides a perspective from which to view the associations between student-teachers’ personality characteristics and their well-being. The DC-W framework could not support those findings, as the results of factor analyses did not contribute discrete variables from which to make those deductions in this research. However, it did provide a means of further contributing to the literature about mastery.

The framework supported the theory that having a sense of mastery impacts on the extent to which teaching demands affect individual student-teachers, thus the
correlation between mastery and reduced depression, anxiety and stress adds to the literature.

The DC-W theoretical framework emphasises the importance of understanding student-teachers’ psychological distress, and the contribution to it made by coping strategies and resources and barriers to help-seeking. These findings add to the literature as the DC-W theory contributes a framework for broadly understanding student-teachers’ use of contemporary coping strategies including CBT, mindfulness and self-help (Aisbett, 2001; Beck, 2005; Kidman, 2006), and exercise (Larun et al., 2006). Some cognitive behavioural coping strategies, used effectively by the general population, when provided to university student populations, are also useful for student-teachers’ well-being, as are Mentor Teachers, important professional resource personnel who support student-teachers during Internships.

8.12 Chapter Summary

This chapter has presented a discussion of the significant findings in relation to the seven research questions of this thesis. The key issues were (1) the meaning of known and/or the unrecognised levels of psychological distress experienced by student-teachers; (2) personal demands experienced by student-teachers in their final year of their four-year undergraduate primary B. Ed. school teaching degree; (3) the significance of personality and mastery; (4) professional demands associated with the Internship; as well as student-teachers’ perceptions about self and career; (5) coping strategies and resources used by contemporary student-teachers; (6) any barriers to help-seeking behaviour; and (7) relationships between levels of psychological distress, the timing of the Internship and personal and/or professional demands.

Based on literature from studies among other university students and teachers, student-teachers were, as expected, psychologically distressed in Week Three of their
final year of academic study, but overall they were not, as predicted by the literature, more psychologically distressed than the general population. Most student-teachers in this study were aged in their early twenties, lived at home and sought the support of family and friends, and unexpectedly, some also found support in religion and spiritual practices.

Personal responsibilities, various debts, having to relinquish other paid work during the Internship, and fears related to their teaching performance contributed somewhat to student-teachers’ psychological distress. Personality characteristics could not be statistically measured, but mastery correlated with student-teachers’ decreased psychological distress.

As student-teachers had to attend a training program during the semester break, they had little preparation time, and immediately prior to their teaching Internship, as anticipated from the student-teacher literature, their levels of depression, anxiety and stress increased. As expected from Australian government education research, findings from feedback at Cluster Group meetings held mid-way through their Internship revealed the importance of Mentor Teachers. Their support was important to student-teachers, and resulted mostly in a positive Internship experience. The findings in this study contrasted to other studies, as these student-teachers found the Internship to be a largely positive experience.

Interpretations of the statistical data, and student-teachers’ comments, demonstrates a complex relationship between their psychological distress and coping strategies. In this study, student-teachers’ psychological distress in response to their Internship, was associated, as expected, with some positive and negative coping strategies. Their use of emotional release with friends, comfort from family, self-help, exercise, cognitive behaviour and mindfulness, and disengagement was as expected,
but their additional comments about spiritual or religious practises for coping, and
limited reference to alcohol use, based on the findings from other studies with
university students, was surprising.

They reported seeking support for Internship stress to varying degrees from
peers, the University Internship Convenor, Mentor Teacher(s), free on-site university
counselling services and other allied health providers. Student-teachers were less
likely to relax during the Internship; instead they worked harder and more seriously,
intent on impressing their Mentor Teachers and receiving an S1 (highest) rating. Some
student-teachers either did not recognize the need for assistance, or, as suggested from
the literature, felt unable to seek professional support due to fears of confidentiality or
stigma, and overall, the effect of any single coping factor was at best only modest.
Chapter 9 Conclusion

The aim of this study was to assess the extent of psychological distress experienced by Primary school B. Ed student-teachers and to evaluate the impact of their Internship as well as the effectiveness of their coping strategies in association with their psychological distress. From the findings of this exploratory study, discussed in the previous chapter, certain trends and relationships were found, leading to the conclusion that student-teachers, in common with the general population, are psychologically distressed. This increased in relation to the perceived demands of teaching, and is reduced by various strategies, including those found in programs available to university students in other faculties.

9.1 Conclusions from the Seven Specific Research Questions

Research Question 1, to understand the prevalence of student-teachers’ levels of psychological distress, and if they were higher than that found in the general population, was resolved. Student-teachers psychological distress levels were measured as depression, anxiety and stress. Descriptive statistics revealed that student-teachers’ responses to DASS items measuring depression and anxiety were positively skewed, suggesting that neither depression nor anxiety applied to the majority of student-teachers at Time 1. However from the findings it can be concluded that student-teachers’-psychological distress at the beginning of their fourth and final year of B.Ed. teacher education degree was similar to that for the general population.

Research Question 2 aimed to examine if there was an association between certain personality characteristics and student-teachers’ psychological distress. It was not possible to distinguish whether or not student-teachers’ personality characteristics had an impact on their psychological distress, but it can be concluded that most were conscientious and extroverted.
Research Question 3 aimed to examine the personal demands made on contemporary student-teachers. Most (approximately 89% of these student-teachers) worked in paid employment, and inability to continue working whilst undertaking an Internship is stressful for those with personal debts to repay. It could be concluded that concerns about obtaining teaching employment on graduation, together with personal debts, including car, rent, and phone expenses, as well as family responsibilities, contribute to student-teachers’ psychological distress.

It was hypothesized that student-teachers who had more personal responsibilities would display greater levels of psychological distress and that these levels would increase over time. Quantitative results did not support this hypothesis, but the qualitative data revealed student-teachers’ significant financial responsibilities. The student-teachers were aged mostly in their early twenties, female, lived at home, and had achieved at least a Credit (65% - 74%) average in their previous university education degree studies. There was some evidence to conclude that there were significant associations between student-teachers’ age range, gender, education or their responsibilities, referred to as personal demands, and their perceptions of psychological distress, the Internship or their coping strategies.

Research Question 4 aimed to examine the professional demands student-teachers’ associate with their Internship, as there are increasingly complex professional standards they must meet in order to be deemed competent (Marsh, 2010). Internship-related demands did contribute to student-teachers’ psychological distress in the preparation stages, but this practical teaching opportunity is a satisfactory stress-reducing positive experience for most student-teachers.

Research Question 5 aimed to explore the coping strategies and resources used by contemporary student-teachers within a new framework. The DC-W framework
incorporates an emphasis on strategies that can be accessed by individuals as self-help, including materials available as books, on-line programs, and other web-based psycho-educational materials. Universities may also provide free access to counseling with mental health professionals and Medicare Australia facilitates access to free or subsidized services from psychologists for emotionally distressed eligible Australian residents.

Physical exercise, associated with greater mental health, was popular among student-teachers. Since exercise has been found effective in reducing depression (Lawlor & Hopker, 2001), those student-teachers who do not engage in exercise may be denying themselves the opportunity for effective stress-management. However, from the broad range of exercise mentioned, we can conclude that exercise is important to student-teachers as a means of enhancing their personal well-being. Cognitive behaviour and mindfulness-based strategies contribute to reduced levels of psychological distress among university students (Collard, Avny, & Boniwell, 2008), and there was some evidence in this study to conclude that it was linked with reduced post-Internship stress.

Based on previous research literature, there was an expectation that poor sleep may be associated with student-teacher’s depression, and that alcohol use may negatively impact on them, but these propositions could not be confirmed by the findings. What could be concluded was that negative coping strategies including withdrawal and avoidance were linked to student-teachers’ depression, and professional support was associated with decreased anxiety.

As GenY student-teachers live amidst this socially connected age-group, we can conclude that they will continue to use web-based resources, and share their concerns on-line.
Research Question 6 aimed to examine if there are barriers that precluded some psychologically distressed student-teachers from seeking help. From the results a possible conclusion is that there are some student-teachers who they did not want others to know about their mental health issues because mental health still carries a stigma in Australia, or they did not recognize themselves as being psychologically distressed.

The final Research Question aimed to examine the relationships between the student-teachers’ psychological distress, their Internship and their coping strategies. Student-teachers’ depression could be predicted by their use of disengagement as a coping strategy, and among those who were least likely to be relaxed. Those who were most at ease about the Internship as it approached at Time 2 were least likely to be anxious, and most likely to use relaxation resources. The student-teachers who were most stressed about the Internship were likely to be those who were worried about the Internship being difficult, whereas those who used CBT/mindfulness coping strategies, and had a sense of Mastery, were least likely to be stressed.

Using both quantitative and qualitative data, the study explored whether or not particular coping strategies would reduce psychological distress, and some cognitive strategies did significantly correlate with psychological distress. Being disengaged predicted depression, thus it had negative implications, whereas, speculating from the qualitative responses, emotional support from friends and family, and help from professional sources, did seem to provide student-teachers a means of releasing their psychological distress.

Socialisation for emotional release was frequently mentioned as a strategy to cope with personal and Internship demands. Social support may be used to reduce the impact of psychological distress. The student-teachers had some experience using cognitive and mindfulness-based strategies CBT/mindfulness, and they sought support
from Mentor Teachers and school staff during the Internship, which, as reported at their Cluster Group meetings, seemed to alleviate any prior psychological distress.

Some student-teachers also referred to mental health conditions for which they had sought past support from health professionals, but during the study, this was their least-used coping resource. Perhaps this was because they were too focussed on being successful with their Internship to pay attention to their mood. They may have disputed the evidence, due to the barriers mentioned earlier, being fearful lest it be interpreted negatively at a time when they were keen to make a positive impression.

9.2 Research Design

There are two methodological concerns: the demographic features and the rates of attrition across the duration of the project. The student-teachers’ age group was not widely distributed, instead being clustered into a small range, with most being in their early twenties, and therefore the number living at home, and having family support, may be disproportionate. Further, the results are based only on data from a cohort at one university campus which may add bias to the results of perceived sources of distress. Student-teachers who dropped out of the study were not followed up, and it may be that they are the ones who were most psychologically distressed, but this potentially rich data is missing.

9.2.1.1 Job Demands and Resources theory (JD-R)

It was concluded that the JD-R theory contributed positively to developing an understanding of the role of professional Internship demands and student-teachers coping resources, and that even though it did not contribute to understanding depression, anxiety or stress, it should be incorporated into the new theory developed this thesis. From the statistical and descriptive results, a conclusion is that Professional Resources are important to mediate student-teachers’ Professional Internship Demands.
9.2.1.2 Teacher Stress Cycle theory

From the TSC alone, it is not possible to draw conclusions about the association between coping strategies and student-teachers’ levels of depression, anxiety or stress.

9.2.1.3 Cognitive theory

This theory contributed a focus leading to further investigation of strategies included in existing programs for university students, and community resources provided by the Australian government to the general population, and was inherent in the new framework.

9.2.1.4 Mindfulness theory

Whilst it was not possible to link mindfulness-base strategies independently to the statistical outcomes, one conclusion is that some student-teachers find mindfulness meditation practices are important to their well-being.

9.2.1.5 Demands, Coping and Wellbeing (DC-W) theory

The Demands, Coping and Wellbeing (DC-W) theoretical framework focussed the study on depression, anxiety and stress, regarded as psychological distress, student-teachers’ personality traits, sense of mastery, personal demands and responsibilities in their daily lives, the professional demands of the Internship. These aspects of student-teachers’ wellbeing were also linked to their coping strategies, resources and barriers to seeking help.

9.3 Missing Values and Attrition

In this research, since there were many student-teachers missing entirely from the final data set, there was the possibility that this would affect the analyses (Cohen, 1988). Only 39 student-teachers remained in the study post-Internship. It was concluded that the large number of missing scores, through attrition, together with the significant
change between pre- and post- Internship scores, decreased the capacity of the predictors to explain the extent to which the scale scores predicted changes in psychological distress. Nevertheless, statistical analyses did confirm that the findings were statistically significant, with a subset of variables predicting psychological distress. From post-Internship findings which were also supported by feedback given at student-teachers’ Cluster Meetings, it was concluded that these findings did demonstrate changes to student-teachers’ psychological distress pre- and post-Internship.

9.4 Implications of Results for Other Student-Teachers

Previous studies found university students’ stress, anxiety and depression were associated with life demands (D'Angelo & Wierzbicki, 2003). Based upon the findings in this thesis, it was concluded that student-teachers were psychologically distressed, and that academic, financial, Internship and other demands contributed to some student-teachers’ existing depression, anxiety and stress. Stress is known to relate to depression and contribute to suicidal thoughts (Ciarrochi, Dean, & Anderson, 2002; Dixon, Heppner, Burnett, & Lips, 1993). Since one in five people in the Australian community, which includes student-teachers, experience mental health problems each year, and the teaching profession is itself stressful, these findings have implications for the health of future student-teachers and teachers.

It was hypothesized that extroverted, conscientious student-teachers, with high levels of mastery and less neuroticism, would be less psychologically distressed. The findings in this thesis partially supported this hypothesis. The three personality items could not be analysed in their existing format, so the results are inconclusive about student-teachers’ personality. However the data obtained from exploratory factor analyses did provide some less specific associations to be drawn between personality and coping with distress.
Previous personality studies had linked personality, time constraints and school students’ behaviour with poor mental health outcomes for teachers (Kokkinos, 2007; Watson & Sinha, 2000). Those professional demands, associated by student-teachers with their Internship, also concerned them. Thus it could be concluded that concern about the professional demands of teaching will increase other student-teachers’ existing depression, anxiety and stress, and this may worsen prior to an Internship. However, specific personality characteristics could not be measured from the data sets obtained.

In terms of coping, mindfulness, a strategy to overcome negative behaviours such as worrying about the past and how things should have been different, was incorporated with CBT strategies rather than being a measure of a singular strategy. The rationale that if focussed on the past, rather than potentially experiencing further pain, one may avoid experiences completely, and this can lead to negative functioning and/or imbalance could not be exclusively understood. Conversely, also based on mindfulness, worry about the future may focus the individual on fear of what could happen, and preclude them from taking any action. This could not be definitively understood as a coping strategy, although the qualitative data did provide information about student-teachers’ worry centred on their future, their concerns about the Internship and their future career. Some student-teachers were very fearful, but it is unknown how their comments (qualitative data) linked to the measures of their psychological distress (quantitative data).

In generalising the findings from this study to primary school student-teachers, two distinct associations seem apparent. First, the primary school student-teachers who participated in this study brought some level of depression, anxiety and stress to their university education. Based on previous research, it was predicted that levels of
psychological distress would be higher among primary school student-teachers in their final year of an undergraduate four year degree than the general population. This prediction was not confirmed, but as student-teachers reported that their psychological distress was exacerbated by the additional professional and career-related stress associated with preparation for an Internship, it can be predicted that student-teachers psychological distress will increase prior to their teaching Internship.

Second, when student-teachers began their final year of a B.Ed. primary school undergraduate degree, student-teachers already had existing positive and negative coping strategies. Qualitative data indicated that peers and family were a popular source of support. However, new forms of social support, now available through social network sites such as Facebook, established in 2004 (http://en.wikipedia.org/wiki/Facebook), which may also provide contemporary coping strategy, were not assessed in this study. From this thesis it can be predicted that other student-teachers will also have formed a range of personal social, cognitive, mindfulness-based, exercise, self-help and other coping strategies, and a view about using, or seeking out professional support for the management of their mental health. However, from the quantitative and qualitative data it is unclear if these support strategies contribute to reduced anxiety and depression.

9.5 Limitations of this Research

Major limitations emerged in this study. The first of these was the somewhat unexpected finding after the first round of data collection that a new Internship structure had been developed, reducing it to six weeks instead of ten weeks. The new structure mitigated the need for the University Internship Convenor and the researcher to visit the student-teachers (Interns) during their professional placement (Internship). A second issue was the lack of email responses from student-teachers, which required that the
original design had to be modified to exclude email feedback.

Most research into psychological distress has analysed data through quantitative statistical methods, which is advantageous because it is relatively straightforward, and by using standardised validated instruments, the evidence can be measured against different population samples. However, a myriad of variables from the Exploratory Factor Analyses in this thesis yielded estimates of effects that may not be accurate. For example, other variables included in the non-standardised scales developed for this study and other validated coping instruments may have yielded more definitive statistical associations, through regression analyses, to provide evidence of stronger links between student-teachers’ particular coping strategies, and their psychological distress.

The mixed-method research design balances the quantitative statistical and qualitative findings, but may be inadequate. The coping strategies did not fall neatly into categories such as CBT, mindfulness, family and social support or self-help. Qualitative data added to an understanding of the student-teachers’ levels of distress and factors which contributed to this, and did outline various coping strategies which would not otherwise have been captured, such as religious and spiritual support. This was secondary, as the major focus was on data collected through questionnaire methods, but did not capture responses from all student-teachers, thus limiting the depth and richness of the outcomes of the research. Further, two types of data collection meant results could not be compared, and associations may be ascribed where none exists.

Methodological limitations restrict the generalisability of these findings. Although standardized instruments were used, the creation of new scales to measure coping and professional demands and resources resulted in the inclusion of other items which may have resulted in different factors and therefore stepwise regression
techniques may have resulted in different predictions. Participants in this study were
techniques may have resulted in different predictions. Participants in this study were
student-teachers at one urban university campus only, which may not be representative
of most student-teachers in Australia. High rates of attrition following the Internship
meant that associations from the quantitative results of cumulative stress could not be
adequately distinguished, so these findings may misrepresent the true relationships
between variables (Dammeyer & Nunez, 1999), and the findings post-Internship cannot
be generalised.

The student-teachers were clustered in their early twenties, the generation most
familiar with technology, but recent web-based global connectivity has resulted in rapid
changes not yet captured in the literature by validated instruments or research. For
example, use of social networking sites may prove a significant coping strategy.
Qualitative data indicated that social support was important to student-teachers, but with
limited research into web-based strategies, the potential impact of such social
networking sites as a contemporary coping strategy was not assessed by this study.

The small sample size in the post-Internship analyses is particularly problematic,
since it is not clear what contributed to the withdrawal of student-teachers from the
study. It may have been that the motivation to obtain work, and time constraints,
outweighed student-teachers’ interest in completing the final questionnaire. However,
the reasons are not provided. Therefore, these limitations raise questions regarding how
the data should be interpreted.

9.6 Implications

There are some implications from these findings for teacher education
authorities. Even though teaching is considered to be stressful, approximately 20% of
Australians, including student-teachers, will be affected by psychological distress. The
Internship may contribute to psychological distress but Australian teacher-education
does not focus on student-teacher well-being, nor does it include coping strategies within the curriculum.

The Australian Institute for Teaching and School Leadership (AITSL) is coordinating a new national approach to the accreditation of higher education programs for the initial professional preparation of teachers, in partnership with the state and territory regulatory authorities and the Australian Council of Deans of Education (Australian Institute for Teaching and School Leadership (AITSL), 2011). High quality teacher education programs of the future are based on the premise that “teacher quality is the single most important in-school factor influencing student achievement” (Organisation for Economic Co-operation and Development (OECD), 2005). Future Australian teacher graduates are expected to meet the Graduate Teacher Standards by demonstrating Professional Knowledge, Professional Practice and Professional Engagement. The foci include understanding the physical, social and intellectual development and characteristics of school students, organising curriculum content into effective learning and teaching sequences, and assessment.

In this study, student-teachers were found to be psychologically distressed. The Internship was found to impact on student-teachers’ levels of psychological distress, but protective factors including mastery and various coping strategies and resources impact on their mental health needs. However, neither student-teachers’ psychological distress or their coping strategies are addressed in the new Australian teacher education initiatives. Nor is there any demonstrated process for recognising and supporting individual student-teachers or teachers who may be psychologically distressed by factors other than professional demands, who may have limited coping strategies, and who may not access to mental health practitioners through Medicare under the Better Access initiative.
These findings attest to the need for systematic stress management programs to be embedded into the undergraduate degree program for student-teachers’ wellbeing. Failure to do so may contribute to their psychological distress, and attrition.

9.6.1 Teacher education

If Teacher Educators receive training in understanding the signs and symptoms of psychological distress, they may become aware of the prevalence of psychological distress among student-teachers. Then they may be more aware of the impact of psychological distress, and associated factors, including personal and professional demands on university students who are studying to become teachers.

How student-teachers feel, whether or not they are interested, bored, stressed or enthusiastic impacts on the school students they teach. Student-teachers move into a field where they are responsible for creating engaging learning environments, so that their school students can become productive and successful citizens. As the work is stressful, student-teachers need opportunities to develop appropriate skills to recognise and manage their own emotions and cope with stress (Brackett, 2010) so they feel encouraged to stay in teaching.

9.6.2 Curricula

Stress management strategies programs (CBT/Mindfulness) and self-help (including referral to web-sites and other materials for self-management) could address all learning types. Psycho-education could reduce the stigma surrounding mental health issues. University students’ psychological distress was reduced with mindfulness-based cognitive-behavioural (MCBT) approach (Segal et al., 2002), and in this study, student-teachers’ anxiety was positively associated with their use of CBT/mindfulness practices, and self-help.
These strategies are also useful in preventing relapses into depression, therefore, applying a mindfulness-based approach could be effective in combating student-teachers’ psychological distress whilst at university, and they could also take these strategies into the workforce, thereby contributing to their life-long wellbeing.

9.6.3 Resources

Stress management programs could incorporate structured opportunities for student-teachers to engage socially, through chat rooms, and other means, as a method of emotional release, and sharing their professional concerns, as shown in this study, in which student-teachers reported favourably on their engagement with others through the internet. Cognitive behavioural programs are increasingly available on the internet (Andersson et al., 2005; Leach et al., 2006), and may suit student-teachers, as remote access enables individuals to adopt strategies to suit their lifestyle demands.

Face-to-face support was valued by student-teachers in this study. Some student-teachers had prior experience with psychologists and counsellors, but all student-teachers could be made aware of referral options, such as initiatives of Medicare Australia, to access face-to-face mental health providers.

9.6.4 Barriers and need for monitoring

Although many universities provide access to medical and other health practitioners, there is a stigma associated with seeking help as found among other university students (Finkelstein & Lapshin, 2006). In this study, most student-teachers were focussed on obtaining a positive rating from their Mentor Teachers, but some revealed that they would not seek support for their mental health. Therefore it needs to be made clear to student-teachers that negative career implications should not result from seeking treatment for mental health issues.
9.7 Future Research

From the findings in this thesis, it is concluded that there is a need for on-going research into teacher education, with a particular emphasis on student-teachers’ psychological distress and coping strategies for their longer term wellbeing. Ignorance of coping strategies and resources, and not attending to a student-teachers’ psychological distress may increase his or her negative mental health outcomes, and result in his or her withdrawal from the teaching profession.

This research indicates a need for further research with student-teachers. Follow-up interviews could not be conducted to ascertain whether or not those who withdrew from the study were the more depressed, anxious or stressed student-teachers because no details were provided. Future research is required in order to understand the attrition of student-teachers from their final year of their B.Ed.. Longitudinal studies measuring psychological distress of individuals when student-teachers, as beginning teachers following their employment, and then as experienced teachers, would enable further examination of associations between student-teachers’ psychological distress and attrition from the profession.

Further research could ascertain whether or not different student-teacher cohorts, based in different geographical regions, with different demographic features, had different levels of psychological distress. Future research with student-teachers of more diverse ages could also reveal different coping strategies. Greater research into contemporary internet-based social systems and coping may suggest a method for supporting geographically remote student-teachers, and contribute to identifying factors associated with attrition, and strategies to overcome stigma.

This research into the prevalence of psychological distress plays an important role in understanding the behaviour of future teachers. One hope for on-going research
into psychological distress is that it leads to teacher educators’ awareness of student-teachers who may be more likely to be distressed by professional demands. As there are high rates of attrition among beginning teachers, this research could contribute to understanding how to continue this support as they begin their teaching careers.

By providing stress management strategies within the teacher education curriculum, the stigma associated with mental health may diminish, and student-teachers and beginning teachers may manage their personal and professional demands more effectively. Other programs may be provided to address previous personality research, showing that conscientiousness, and high achievement, or Type A behaviour, is a predictor of stress (Jepson & Forrest, 2006).

Overall, these results deserve that serious attention should be given to providing stress management programs for student-teachers, and to addressing the mental health needs and psychological distress of individuals. Future research will be required to determine the success of potential solutions to student-teachers’ well-being if based on implementing stress management programs in teacher education and providing support to affected student-teachers. This in turn has the potential for preventing student-teachers from dropping out prior to their Internship, and when coping with demands during their first five years of employment as Australian primary school teachers.

9.8 Chapter Summary

The purpose of the study was to examine seven specific research questions on the psychological distress in final year B.Ed. student-teachers, and it was found to be associated with personal demands, mastery, some personality factors, and coping strategies and resources.

In Chapter 9, conclusions based on the findings discussed in Chapter 8, point to the need for a future teacher education curriculum incorporating stress management
strategies for student-teachers. The mixed methods design and the Demands, Coping and Wellbeing theoretical framework developed to explore the theoretical constructs underpinning this study contributed to the structure used in obtaining the results and presenting the findings.

This chapter identified that there were some interpretation challenges, due to methodological limitations in this study and post-Internship attrition. Nevertheless, the data contributed statistical findings that could be replicated, generalised, and applied to other student-teachers. In view of previously unrecognised levels of psychological distress among primary school student-teachers and ignorance of their coping strategies, as well as the career demands of this stressful profession and reluctance by some to address the impact of personal and professional demands, the conclusions about student-teachers’ levels of psychological distress, and limited use of coping strategies, adds to the growing evidence in the challenge for Teacher Educators to develop resilient teachers. These conclusions may be helpful for future research into the demands on student-teachers, their coping strategies, and their wellbeing and attrition within the first five years from the teaching profession.
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