


**Perceived stress, coping self-efficacy and adaptive coping strategies of South African teachers**

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## **Preface and Acknowledgements**

This basis for this study stemmed from my passion for understanding human behaviour in the context of the workplace and more specifically, improving the mental well-being of educators in South Africa. Being a teacher myself, I have perceived various accounts of stress during the past eight years of my career, but I have also celebrated both personal and professional successes along the way. Therefore, my study titled as “*The perceived stress, coping self-efficacy and adaptive coping strategies of South African teachers*” brought a personal meaning to my career as a teacher and delivered much-needed insights into the lives of teachers. My curiosity in terms of conducting empirical research and my interest in psychology and the application thereof in the well-being of teachers, was fuelled in the process of studying the constructs researched in this study.

I was also extremely fortunate to have had access to so many teachers who were more than willing to participate in my study, willing to voice their opinions about the teaching experience and context of education. Many participants even requested feedback after completion of the study, which convinced me that this study could contribute to well-being of teachers in their class room experiences.

In truth, I could not have undertaken my Masters study without a strong support group by my side:

- First and foremost, I would like to thank my supervisor, Prof Chrizanne Van Eeden for her valuable and extensive support, tireless enthusiasm and her unwavering patience from the very first day of this study. Thank you for awakening my interest in research and for a thorough grounding in the principles of thereof.
- I am especially grateful to Mr Frik Van Eeden for his part in assisting with the technicalities associated with this study and the assistance he provided in this regard.

- I would also like to thank Ms Elizabeth Bothma for introducing me to quantitative data analysis and her continuous assistance with the statistical analysis of this study. Although I initially found data analysis quite challenging, thanks to her competency, I now have a broader understanding of these concepts.
- Many people have contributed either directly or indirectly to this project and I would also like to thank the language editors from the Centre for Translation and Professional Language Services (CTrans) for their detailed suggestions on how to improve the grammatical quality of this study.
- Thank you also to the Gauteng Department of Education for granting me permission to conduct research in the schools under their jurisdiction and also to every principal who offered their time to help me with data collection. Without your teachers' enthusiasm and willingness to participate, this study would not have been possible.
- I would also like to thank my dear husband for his unconditional support, "TLC" and love that has been a much-needed part of this journey.
- And above all, I would like to express my humble gratitude towards our Heavenly Father for carrying me through the difficulties and filling me with the courage to complete this study.

*"I Can Do All Things Through Christ Who Strengthens Me" -Philippians 4:13.*

## Remarks for the Reader

- In the writing of this dissertation, the referencing and editorial style as prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA) was followed. This practice is in line with the prescribed referencing style for the Master's degree programme in Psychology at the North-West University (Vaal Triangle Campus).
- The research findings in this dissertation are submitted in the form of two research articles. This is according to the policy of the North-West University as stated in the academic rules of 2017: General Academic Rules (4.2.3.3, 4.3.1.3 and 4.4.1).
- Each chapter and manuscript of the dissertation has its own reference list.
- The dissertation consists of an introductory chapter, chapter two containing the main findings of the study, and a final chapter outlining the conclusions, limitations, and recommendations pertaining to the study.
- The introductory chapter gives a fairly complete review of theoretical and empirical literature pertaining to the constructs investigated in this research. From this overview the literature used in the articles (manuscripts) was obtained and therefore some duplication may occur in these documents.

## Summary

In this Master's study, the perceived stress of a group of Gauteng teachers, their sense of coping self-efficacy, and their adaptive coping strategies, specifically the statistical relationships between these variables, were investigated.

In the literature overview (Chapter 1), the theoretical conceptualization and models or frameworks of stress, coping and self-efficacy constructs, were described. In the exposition, the context of this study namely the stress-laden South African educational sector, was stipulated. Research findings on the stress of South African teachers, their coping strategies in attempting to deal with the stress encountered, and their sense of self-efficacy were articulated. From this literature exploration, the research question emerged as: *Would a sense of self-efficacy and using adaptive coping strategies have significant influence on the perceived stress levels of teachers, in other words what are the relationships between perceived stress, a sense of self-efficacy and the coping strategies of South African teachers?*

The following section described the research methodology of the study including research design, participants and procedures, data collection, data analyses, and ethical aspects considered.

The research report (Chapter 2), was presented by means of two manuscripts that would later be submitted for publication in appropriate subject-related journals.

*Manuscript 1:* In this study, the relationships between the perceived stress, a sense of coping self-efficacy, and the adaptive coping strategies of teachers in Gauteng, South Africa, were investigated. The N=283 teachers completed the Perceived Stress Scale or PSS (Cohen & Williamson, 1988), the Coping Self-efficacy Scale or CSES (Chesney et al., 2006), and the Coping Strategy Inventory or COPE (Carver, 1997). Descriptive statistics, reliabilities of factors representing the scales, and correlations between the factors were calculated. With Mplus 8.1 (Muthén & Muthén, 1998-2016) a measurement model was specified and tested for best statistical fit. On the best fitting measurement model, a structural model was based and

also tested for statistical fit. Statistical path coefficients indicated the direct and indirect pathways of perceived stress and coping self-efficacy to adaptive coping strategies. Thereafter, by means of the bootstrapping method, it was determined that coping self-efficacy, through perceived stress, had an indirect effect on the adaptive coping strategies of teachers. The findings, as well as limitations of the study, were described and discussed. All research aims were met.

*Manuscript 2:* In this study, the latent profiles of teachers based on their perceived stress and adaptive coping strategies were analysed and their coping self-efficacy was used to predict profile membership. The N=283 teachers from Gauteng, South Africa, completed the PSS of Cohen and Williamson (1988), the Brief COPE of Carver (1997), and the CSES of Chesney et al. (2006). By means of Mplus 8.1 (Muthén & Muthén, 1998-2016) latent profile analysis was done and three profiles were specified, namely moderately coping teachers (48.6%), non-coping teachers (12%), and coping well teachers (39.4%). Regression coefficients for the latent variables significantly showed that teachers who cope well will likely use problem-solving coping self-efficacy, and those who do not cope will likely use emotional coping self-efficacy. No significant differences were found in the coping self-efficacy of moderately coping teachers compared to coping well teachers. The findings were described and discussed, and limitations of the study were indicated. The aims of the study were met.

In the final chapter, conclusions and recommendations flowing from the study were made. In conclusion, the research question of the overall study and the two sub-studies were answered, aims were met, and valid findings were reported.

**Keywords:** coping self-efficacy, coping strategies, latent class analysis, perceived stress, structural equation modelling, teacher stress.

## **Declaration**

I, Elmarie Rautenbach, declare that "The perceived stress, coping self-efficacy and adaptive coping strategies of South African teachers" is my own work and that the views and opinions expressed in this work are those of the author and based on relevant literature references as shown in the list of references. I further declare that the content of this research will not be submitted for any other qualification(s) at any other institutions.



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19 NOVEMBER 2018

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To whom it may concern

This letter serves to confirm that the document entitled *Relationships between teachers' perceived stress, coping self-efficacy and adaptive coping strategies* has been edited by the Centre for Translation and Professional Language Services (CTrans), in accordance with the NWU/CTrans's guidelines for editing academic articles and dissertations. CTrans is a registered corporate member of the South African Translators' Institute (SATI) that makes use of qualified and experienced language practitioners to provide professional translation and language editing services.

CTrans hereby acknowledges that the document has undergone a proper and professional language edit (including the checking of spelling, grammar, register and punctuation). The onus rests on the client to work through the proposed changes after the edit and accept or reject these changes.

Yours sincerely

A handwritten signature in black ink, appearing to read 'W Barrow', written in a cursive style.

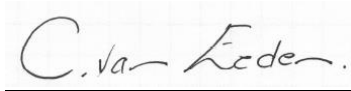
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## **Permission to Submit**

I, Professor Chrizanne van Eeden, hereby give permission to Elmarie Rautenbach to submit this document as a dissertation for the qualification MA in Psychology.

Furthermore, I confirm that this dissertation has been written in the article format that is in line with the 2017 General Academic Rules (4.2.3.3, 4.3.1.3 and 4.4.1) of the North-West University.

A handwritten signature in black ink on a light blue grid background. The signature reads "C. van Eeden." and is underlined.

Supervisor

Chrizanne van Eeden

November 2018

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## Chapter 1

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# CHAPTER ONE

## Literature Overview of the Study

**Keywords:** adaptive coping strategies; occupational stress; perceived stress; sense of coping self-efficacy; teacher stress

As a foundation to the study, a wide variety of available literature was perused and reviewed to enable the identification and conceptualization of key constructs pertaining to the perceived stress, self-efficacy, and coping strategies of teachers. This helped to develop the study's research protocol and provided the theoretical framework for the research problem and findings. This literature overview will be discussed in what follows and will also serve as the literature background for the two manuscripts in which research results will be reported. Some duplication of content may therefore occur between this chapter and the manuscripts.

In this chapter, the following will be described: theoretical frameworks of perceived stress of teachers, of adaptive coping strategies in dealing with perceived stress, and of a sense of self-efficacy in coping with perceived stress. The research methodology utilized to investigate the above constructs in the teaching context will be explained.

### **Perceived Stress**

The perceived stress of teachers was the first construct in the stress-self-efficacy-coping-relationships that were investigated in this study. Below, conceptualizations, theoretical frameworks, and models of stress will be briefly described.

### **Conceptualization of stress**

According to Nelson and Quick (2006), stress is the unconscious preparation to fight or flee that a person experiences when faced with a demand, and in addition, a stressor is a person or event that triggers a stress response, while strain or distress refers to the adverse psychological, physical, behavioural or organizational consequences that may arise as a result of stressful events. Stangor and Walinga (2014) described stress as a response, a stimulus and a transaction. How an individual perceives stress, determines his or her coping strategies. This view agrees with Khoza and Milner (2008) who described perceived stress as the psychological and physiological response of a person to an experienced threat.

Some theoretical approaches imply that stress is intrinsic to a particular situation and Rothmann and Viljoen (2009) stated that stress is the response of an individual to the self-perceived imbalances between the demands of the situation and the resources one has at one's disposal to respond successfully. Brown and Harvey (2006) furthered this notion by viewing stress as an interaction between an individual and the environment, which affects physical and mental health. Such views have relevance to the context of teachers and their stressful encounter with the demands of the educational work environment, studied here.

Stress can be seen as a multifaceted phenomenon, which is in line with the view of Bearschank (2010), who noted that stress involves three aspects, namely: the sources of stress that are experienced in the environment; the perception and appraisal of the nature of the stressor; and the emotional reactions that occur when the stressor is viewed as threatening by the individual. According to Weiten (2014), in order to understand the nature of stress, theorists have divided stressful events into sub-types. Stowell, Tumminaro and Attarwala (2008) for example, differentiated between *acute stressors* and *chronic stressors*. *Acute stressors* are events that have a relatively short duration and a clear point of resolution, while *chronic stressors* are events or situations that have a relatively long duration and no apparent time limit. Classifying stressors seemed to pose a challenge for researchers while describing major types of stress was more possible, and Weiten (2014) identified four types of stress that impact on a person almost daily.

### ***Conflict***

Conflict is seen as the occurrence when two or more motivations or behavioural impulses compete for expression (Weiten, 2014). According to Coleman (2015) conflict relates to the negative feelings experienced between people and groups in problematic relationships, for example, feelings of anxiety, fear, anger, contempt, and revulsion. In the workplace, conflict is commonly associated with specific types of behaviour, including dysfunctional

communications, authoritarian management, aggression, backstabbing, disrespect, and workplace politics.

Weiten (2014) further noted the existence of three types of conflict: *approach conflict* – when a person must choose between two equally attractive outcomes; *avoidance conflict* – when a choice must be made between two equally unattractive outcomes; and *approach-avoidance conflict* – when a choice must be made about whether or not to pursue a single goal that has both attractive and unattractive aspects.

### ***Frustration***

According to Weiten (2014) frustration occurs when the pursuit of a person's goal is thwarted or impossible to achieve and such frustrations experienced on a daily basis can elicit anger and physical symptoms. Coleman (2015) cited research that found that approximately 86% of workers regularly vent their anger and frustration at their co-workers. Coleman also found that personality clashes and stressful work environments can have a negative effect on personal well-being and emotional health.

### ***Major life changes***

Weiten (2014) stated that life changes are significant alterations in one's living circumstances that require readjustment. Although change is not perceived as ultimately stressful, it is quite possible that negative events can constitute a major source of stress in people's lives (Weiten, Dunn, & Yost Hammer, 2013). McLeod (2010) referred to Holmes and Rahe (1967) who identified the following life events as most stressful: death of a spouse, divorce and marital separation, imprisonment, death of a close family member, personal injury or illness, dismissal from work, relocation, and retirement and concluded that these events were positively correlated with illness. McLeod also stated that changes can be stressful even when the changes are welcomed by the individual, such as relocating or changing jobs.

## ***Pressure***

Weiten, Dunn, and Yost Hammer (2013) viewed pressure as expectations or demands to behave in a certain way. They divided pressure into two subtypes, namely the pressure to perform and the pressure to conform. A person is under pressure to perform when he or she is expected to manage tasks quickly, efficiently and successfully (Weiten & Lloyd, 2004). Aronson and colleagues gave a comprehensive definition of conformity as, “a change in a person's behaviour or opinions as a result of real or imagined pressure from a person or group of people. This behavioural change can be an active response to the real pressure exerted by the group involving their physical presence or to the imagined group pressure resulting from the pressure exerted by social norms and group attributes” (Aronson, Wilson, & Akert, 2007, p. 78).

## **Frameworks and models of stress**

### ***The Transactional Model of Stress and Coping***

This model developed by Lazarus and Cohen (1977), is a framework for evaluating the processes of coping with stressful events and considers stress as an individual experience which is both interactional and situational (Rout & Rout, 2002; Wilson & Hall, 2002). Stressful experiences are seen as person-environment transactions that depend on the impact of the external stressor and are mediated by the person's appraisal of the stressor and the social and cultural resources at his or her disposal (Glanz, Rimer, & Lewis, 2002).

When faced with a stressor, a person evaluates the potential threat (primary appraisal), followed by the secondary appraisal, which involves dealing with the stressor and assessing one's coping resources, described as efforts aimed at regulating emotions and dealing with the problem itself and give rise to the outcomes of the coping process (Glanz et al., 2002). According to Schultz and Steyn (2007) different individuals, when confronted with the same situation, may differ in how they experience stress and the different responses may be due to personality traits such as a sense of self-efficacy.

In Table 1 below, the key components of the transaction model of stress and coping are summarized.

**Table 1:** *Key components of the Transaction Model of Stress and Coping*

CONCEPT	DEFINITION
Primary appraisal	Primary appraisal is a person's evaluation of a stressor or threatening event as stressful, positive, or irrelevant.
Secondary appraisal	Secondary appraisal is an assessment of a person's available coping resources. Secondary appraisals determine what a person can do about a situation and evaluate the controllability of the stressor and a person's coping resources.
Coping efforts	Behavioural strategies used to mediate primary and secondary appraisals.
Emotional regulation	Strategies aimed at managing a person's emotional and/ or mental reaction to a stressor.
Outcomes of coping	Emotional and mental well-being, healthy behaviours.
Dispositional coping styles	Generalized ways of behaving that can affect a person's emotional or functional reaction to a stressor and are relatively stable across time and situations.
Optimism	The tendency to have overall positive expectancies for certain outcomes.
Information seeking	Attention styles involving avoidance versus those that involve careful monitoring of a situation.

Adapted from Glanz et al. (2002, p. 214).

The above table serves as a conceptual summary of the different features described in the transactional model of stress and coping, as well as different coping strategies used to mediate the primary and secondary appraisals. The coping strategies mentioned can also be described as adaptive responses to stressful situations.

### ***The stimulus-based model of stress***

According to the model of Rahe and Arthur (1978), as referred to by Stangor and Walinga (2014), stress is conceptualized as a stimulus or a significant life event that demands response, adjustment, or adaptation. Stress, therefore, emerges when the burden made on a person exceeds the limit of the person's ability to cope (Rout & Rout, 2002; Wilson & Hall, 2002). The "stress as stimulus" theory assumes that, firstly, change is inherently stressful; secondly, that life events demand the same levels of adjustment across the population; and thirdly, that there is a common threshold of adjustment and the consequences of exceeding these boundaries can result in illness.

This model views people as passive recipients of stress and gave no consideration of the degree, intensity or valence of the stressor, ignoring important variables such as prior learning, environment, support networks, personality, and life experience (Stangor & Walinga, 2014).

### ***The response-based model of stress***

In the response model of stress, stress features are inherent in the General Adaptation Model (GAS) of Selye (1983). According to Willson and Hall (2002), stress is an individual's psychological, physiological, and behavioural reaction to stressful conditions (Willson & Hall, 2002). An individual is viewed as a passive recipient of stressful stimuli, who is guaranteed to experience stress when under pressure (Schultz & Steyn, 2007). According the GAS model of Selye (1983), stress is a dependent variable and includes three concepts: stress as a defensive mechanism; stress as a response following the three stages of alarm, resistance, and exhaustion; and stress as a causal factor of disease or poor well-being when faced for prolonged periods of time.

When facing a negative stimulus, the alarm response initiates the sympathetic nervous system to fight or to avoid the stressor i.e., the *fight or flight* reaction to the stressor. This response can either return the system to homeostasis and therefore reducing harm, or

accommodate the stressor, which can lead to illnesses such as sleep deprivation, mental dysphoria, hypertension, or heart disease (Stangor & Walinga, 2014). Marchand, Justerand, Durand, and Lupien (2014) also explored this model and described the three stages as follows: firstly, the *alarm reaction* is an instantaneous reaction to a stressor. In the primary phase of stress, humans engage in a fight, flight, or freeze response. This stage drains energy from other systems such as the immune system, increasing a person's tendency to contract an illness. Secondly, *resistance* occurs when the alarm reaction continues and the body accommodates the feeling of being stressed, because if energy is concentrated on the stress reaction, one's health may suffer from the effect. Thirdly, *exhaustion* is the final stage after long-term exposure to a stressor. The body's resistance to stress is reduced and collapses as the immune system becomes ineffective. People who experience long-term stress may suffer from heart illness or severe infections due to their reduced resistance to illness (Marchand, Juster, Durand, & Lupien 2014).

However, theorists criticized Selye's approach and indicated that the stress experience has both physical and psychological implications and Lazarus and Folkman (1984) presented their classic view that stress is an entirely psychological rather than a physiological phenomenon, in which psychological stressors have a greater impact on a person's functioning. Furthermore, researchers also argued that the stress environment can be salutogenically viewed (Antonovsky, 1979) in contrast to the mainly pathogenic earlier viewpoints and thus, that stress can be either functional (Crum & Lyddy, 2014) or dysfunctional.

### ***Functional and dysfunctional stress***

Berndt and Oosthuizen (2008) described stress as being either functional or dysfunctional and stated that functional stress can promote successful performance by motivating people to reach a certain goal, whereas too much stress can have negative consequences and can be considered as dysfunctional. The authors concluded that stress can, therefore, be seen as

either positive (“eustress”), such as starting a new job, or negative (“distress”), for example not being able to meet one’s job demands. Everyday stress or “daily hassles” are associated with a decline in well-being (Cromer & Sachs-Ericsson, 2006; Suh, Diener, & Fujita, 1996).

### *Aspects of functional stress*

Crum and Lyddy (2013) wrote extensively about the functional or positive aspects of stress and indicated that stress can have positive effects on health, performance and well-being and that a person’s mind-set through which stress is perceived, determines the degree to which stress produces positive or negative effects on one’s health and well-being.

According to Crum and Lyddy (2013), the body’s stress response was designed to improve physiological and mental functioning to meet the demands of survival, and this occurrence is referred to in the literature as *eustress* or “good” stress that yields beneficial outcomes. Stress can make a person more pro-active, productive, and focused, with improved cognitive ability and memory. The stress response releases hormones such as adrenaline, cortisol, and dopamine throughout the body, feeding the brain and body with blood and oxygen (Cahill, Gorski, & Lee, 2003). Moreover, the stress response can serve as a source of motivation and initiative-taking in order to acquire the necessary skills and self-efficacy needed to meet pressing demands and to assist in proactive problem-solving by anticipating and planning for all possible situations and outcomes. Therefore, stress can positively influence the biological processes implicated in physical recovery and immunity referred to as *physiological thriving* (Fay & Sonnentag, 2002). According to Crum and Lyddy (2013), the experience of stress extracts a series of anabolic hormones that restore cells, synthesize proteins and improve immunity, leaving the body stronger and healthier than it was before the stressful experience.

In terms of well-being, researchers have documented a phenomenon referred to as *stress-related growth*, meaning that stressful experiences fundamentally change individuals for the better. Stress can improve the development of mental strength, increased awareness,

new insights, refocused priorities, more satisfying relationships, and a sense of meaningfulness (Park & Helgeson, 2006; Tedeschi & Calhoun, 2004).

Crum and Lyddy (2013) concluded that individuals can thus respond to a stressor in a more effective way. When stress is acknowledged, welcomed and utilized, many positive outcomes can occur. An example of such an optimal way of functioning is the use of positive frameworks called *mind-sets*, which focuses one's attention and adapt to the stressful information in such a manner as to allow for more simplified and automatic functioning in the presence of contradictory or uncertain information. According to Dweck (2006), two distinct types of mind-sets exist. The *growth mind-set* is the belief that a person can adapt and improve his or her actions to become more positive through practice and effort, whereas someone with a *fixed mind-set* believes these actions are predetermined and largely unchangeable. Studies proved that the mind-set a person adopts regarding stress may influence the manner in which they approach stress, which in turn could generate self-fulfilling consequences on health, performance, and well-being (Crum & Lyddy, 2013).

### ***Aspects of dysfunctional stress***

According to Wheaton (1996) feelings of anxiety and depression indicate the presence of harmful psychological stress, while Smith, Segal, and Segal (2015) classified symptoms of dysfunctional stress as cognitive symptoms, emotional symptoms, physical symptoms, and behavioural symptoms. Cognitive symptoms include impaired memory, concentration and judgment, negative thinking patterns, anxiety and excessive worrying, while emotional symptoms refer to moodiness, feelings of beings overwhelmed, loneliness, depression, and irritability. Physical symptoms, which indicate health concerns in response to stress, include aching or pain, diarrhoea, nausea, high blood pressure, lowered immune support, and inconsistent patterns of losing or gaining weight. Behavioural indicators of stress are disruptive eating and sleeping habits, isolation and lack of interest in daily activities,

substance abuse, and compulsive nervous habits such as nail biting or pacing (Smith, et al., 2015).

In any study on the stress that teachers experience in the educational context, some teachers will manifest the maladaptive (dysfunctional) impact of stress and others will report on the adaptive (functional) efforts thereof. The question then arises as to what made the difference, or in the words of Antonovsky (1979) “whence the strength” to deal with the perceived stressful experience?

Previously, it was shown that the stress experience is often related to a demanding environment or context that poses severe demands to a person’s stress management abilities and resources. Stress in the work environment, and particularly in the teaching context, will be described below.

### **Occupational stress**

Stress is an important part of everyday life and simply cannot be evaded. People meet stressful stimuli numerous times a day in their personal and social domains and, as work is an essential aspect of human existence, also in the workplace (Kendall, 2000). Work plays a major role in people’s lives and exerts an important influence on their sense of well-being and identity (Barling, 1990). According to Shukla (2008) occupational stress is known as stress at work and it arises when there is an inconsistency between the demands of the workplace and that of the individual’s personal resources. Kyriacou (2001) viewed occupational stress as a person’s negative emotional states such as frustration, worrying, anxiety, and depression attributed to work-related factors.

Occupational stress is a growing component of the mental health burden. Indeed, work-related stress has been described by the International Labour Organization (ILO) as a global epidemic (Kofoworola & Alayode, 2012), while a study by the American Psychological Association, showed that almost 70% of employees reported their work as being a major contributor to stress (Botha & Pienaar, 2006). Although national frequency data for work-

related stress could not be found for South Africa, stress has been reported in a number of occupational categories in the country, including educators (Botha & Pienaar, 2006) and the widespread concern regarding teacher stress has led researchers to focus on this area. Furthermore, there has been an increasing recognition of the link between mental and physical health and occupational stress, and indeed a concern to improve the working lives of teachers (Williams & Gersch, 2004). Stress in the educational sector will be discussed below.

### ***Teacher stress***

Studies have suggested that teachers experience alarmingly high levels of stress (Adeyemo & Ogunyemi, 2005) and De Jesus and Conboy (2001) found that educators' experience of stress is globally higher than most other occupational groups. According to Lambert, O'Donnell, Kusherman, and McCarthy (2006, p. 105) teaching has been described as a profession that is "emotionally taxing and potentially frustrating" and Engelbrecht and Eloff (2001, p. 256) defined occupational stress in educators as "the negative or unpleasant result of task demands that educators face in performing their professional roles and responsibilities".

Day, Sammons, Gu, Kington, and Stobart (2009) identified a number of factors found to influence teachers' decisions about staying on or leaving the profession, including job stress, job satisfaction, hardiness, and self-efficacy. Other stressors that might influence this decision include contextual stressors such as workload, administration, class size, role ambiguity and conflict, the pressures of the teachers' roles (e.g., counsellor, facilitator), poor working conditions, little recognition and low compensation, lack of involvement in decision-making, student rebellion, or lack of effective communication between school management teams and educators (Shukla, 2008).

A study on teachers in England found that half of the teachers have considered quitting the profession because of the stress of working with disrespectful pupils (Smith, 2007). Two-thirds of the 823 teachers sampled by the channel *Teachers' TV* admitted that one of the biggest causes of stress was the behaviour of pupils. Smith found that more than 60% of these

teachers felt stressed as a result of teaching, even when not in school, and there were many complaints of long working hours (Smith, 2007). An interesting study by Zhang and Zhu (2006) indicated that the meticulous character of Chinese teachers contributed to their high-stress levels and the possibility of burnout.

Equivalent to research in other countries, South African studies indicated that local teachers seriously suffer from stress (Van Tonder & Williams, 2009). A study of teachers in Kwa-Zulu Natal found that the levels of stress experienced by secondary school teachers are high, compared to countries like England, Australia, Malta and Wales (Ngidi & Siyaba, 2002). South African research further found that educators face a multiplicity of stressors in their work and moreover, challenges facing educators have changed radically with the passing of the South African Schools Act in 1996 (Ngidi & Sibaya, 2002). Innovations such as inclusive education, the eradication of corporal punishment, additional mediums of instruction, lack of discipline, learning difficulties and unmotivated learners, large learner-educator ratios, time demands, the threat of redundancy, insufficient salaries, etc. are often to blame for the mounting levels of stress among educators in South Africa (Jonas, 2001; Ngidi & Sibaya, 2002; Saptoe, 2006). According to Adams (2001) educators are expected to execute various and diverse activities while facing many individual, social, and professional responsibilities in today's fast-paced teaching environment, which could lead to their experience of stress. Schultz and Steyn (2007) specified three sources of teachers' stress.

*Professional demands:* Salient professional factors that have been found as educational stressors are the following:

Collins and Parry-Jones (2000) found that primarily, a heavy workload with little time available commonly features as a key stressor among South African teachers. The amount of time available to complete the given syllabus is often not enough and results in teachers not covering the work properly.

Secondly, the influence of HIV/AIDS and the responsibilities of the South African teacher regarding this phenomenon cannot be ignored (Van Tonder & Williams, 2009). Aside from their primary role as educators and meeting their learners' intellectual needs, some teachers also execute the role as "caretakers" of orphaned children or those with sick parents (Hall, Altman, Nkomo, Peltzer, & Zuma, 2005).

Third, Cooper (2001) found that sufficient support from principals can influence teachers' perceptions and attitudes towards their responsibilities. This author concluded that teachers with a lack of support from their principals experience more stress-related and psychological symptoms than those who receive adequate support.

Fourth, Schultz and Steyn (2007) cited research reporting that curricular problems, including lack of resources, class sizes, and the amount of paperwork and administration educators are required to do, is a strong cause of stress. Some schools do not have sufficient funds to cover the basic resources such as books and other materials needed to successfully deliver the curriculum (Schultz & Steyn, 2007).

Fifth, according to Wilson and Hall (2002) many teachers are under pressure to raise academic standards despite unfavourable conditions and lack of support from the community. Insufficient or irrelevant educator training programs also influence the experience of stress, because these fail to give teachers the needed dynamic skills to meet the demands of teaching. Inadequately trained teachers lack self-confidence, feel uncertain about their ability to communicate effectively with learners, and feel disempowered (Moriarty, Edmonds, Blatchford, & Martin, 2001).

Lastly, the teaching context is continuously transforming. In addition, inclusive education requires all teachers to deal with various learning disabilities and special needs of learners in their classrooms. The pressure from the Department of Education to maintain the same level of performance regardless of the circumstances increasingly influences job satisfaction and stress among educators (Grobler, Wörnich, Carrell, Elbert, & Hatfield, 2002).

*Role-based stressors:* According to Harris and Hartman (2002) role ambiguity occurs when educators do not have clarity about their responsibilities or work objectives. Studies reported that educators are overloaded by roles to fulfil, for example, as counsellors, social workers, managers, examiners, administrators, extra-curricular trainers, and creative educators who are concerned with the performance of learners (Conley & Woodsley, 2000). Furthermore, Collins and Parry-Jones (2000) found that the home-work interface contributes to stress for both male and female teachers, while Rout and Rout (2002) concluded that married female teachers have higher levels of work-related stress, due to their domestic commitments to their families in addition to teaching.

*Interpersonal relationships:* According to Govender (2002) and Kyriacou (2001), supportive colleagues' and teachers' contentment with the teaching environment are reasons for educators experiencing job satisfaction, while the lack thereof often leads to stress. Kyriacou (2001) and Montgomery and Rupp (2005) further mentioned that poor learner discipline such as disruptive student behaviour, aggression, violence, and lack of motivation, is considered a major stressor among South African teachers. To illustrate the above, the following are some incidents that have been reported in the press:

- A young teacher at a Cape Town school was too traumatized to return to work as a result of the physical and verbal abuse that she has suffered from pupils in her class. A Grade 8 pupil had set her hair on fire and on previous occasions, a boy twisted her arm and another had made sexual comments (News24, 2013).
- There was no teaching for a week in February 2013 at Wongalethu High School in Mdantsane, Eastern Cape. The Dispatch Online reported that teachers fled the school in January, 2013 during a protest, in fear of intimidation from pupils (News24, 2013).
- A Northern Cape teacher was fired after she allegedly refused to adjust the marks of the principal's son so that he could pass a subject (News24, 2013).

- A 19-year-old, Grade 12 learner from Imbali outside Pietermaritzburg was arrested for hitting his teacher with a desk plank (News24, 2012).
- A female teacher was suspended for allegedly hitting a pupil at a high school in Alberton, after being taunted by the learner (News24, 2011).
- A Grade 8 pupil from a high school in southern Johannesburg was suspended for physically attacking a male teacher with a broom, with fellow pupils urging him on (News24, 2013).
- A learner from Eldorado Park Secondary School in Johannesburg was arrested after pointing a gun at his teacher (Gous, 2018).
- A 17 year old learner from a high school in Zeerust, North-West, stabbed a teacher to death in front of his classmates (Jordaan & Njilo, 2018).

Furthermore, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) **stated** that teacher stress and a lack of self-efficacy may affect the quality of the learner-teacher relationship, while Bhana, Morrell, Epstein, and Moletsane (2006) found that working with parents and a lack of parental support and involvement is also identified as a possible stressor for teachers.

### ***Demographic factors contributing to teacher stress***

Studies have found links between demographic variables and work-related stress experienced by teachers in general (Aftab & Khatoon 2012; Jackson, Williams, Stein, Herman, Williams, & Redmond, 2010) and Aftab and Khatoon(2012) found that stress is caused by the existence of multiple factors, including the demographic variables of the individual and the ability to utilize effective coping mechanisms. According to Bashir, Khan, Qureshi, and Qureshi (2013) research are needed on teachers' demographic variables such as culture, age, gender, qualifications and location of the school, to understand how these variables impact on teachers' way of coping with stressful events at work. The authors also argued that studies that have investigated these demographic variables, could offer more credible criteria for

interventions regarding the coping strategies for teachers. According to Putter (2003) however, there are inconsistencies in research findings of the extent to which demographic characteristics influence the levels of stress of teachers in South Africa.

*Gender:* Schulze and Steyn (2007) suggested that gender may be an important demographic characteristic to be considered in the experience of stress and they found that female teachers experienced more stress due to the conflict between their twofold roles as both educators and housekeepers. “Although spouses may have similar attitudes towards work and family roles, in reality, women (including female educators) carry a large share of the household chores” (Collins & Parry-Jones, 2000, p. 786). Such findings are relevant in the South African society, which is still mostly patriarchal. The dual role demands on women may also explain why more female educators indicate lack of confidence as a professional (Coetzee & Rothman, 2005). In this regard, these authors also found that cultural perceptions seem to have a negative effect on the stress levels that women experience.

In contrast, Mondal, Shrestha, and Bhaila (2011) found a significant difference between male and female teachers, with male teachers reporting more psychological stress than female teachers. Moreover, male teachers were observed to have higher stress coupled with anxiety than female teachers, while South African female teachers tended to complain more of burnout than male teachers (Jackson et al., 2010; Okeke, Adu, Drake, & Duku, 2014).

*Age:* Mondal et al., (2011) mentioned that the decision to leave the teaching profession would probably be influenced by age since it is perceptibly easier for a young educator to start a new career. Younger educators are less set in their ways and open for the experience, therefore they may be more adaptable to change, while older educators near retirement may not be equally inclined to adapt (Moriarty, Edmonds, Blatchford, & Martin, 2001).

Schulze and Steyn (2007) found that educators who were between 36 and 45 years old differed significantly from the other age groups in terms of what they find stressful. Their perceived stressors included changing circumstances outside classrooms and in schools, and

assisting learners with their problems. According to Rout and Rout (2002) middle age may play a moderating role in educators' experience of stress, while Moriarty et al. (2001) found that educators who are 36 to 45 years old may need more support to implement the changed curriculum than younger educators, who are more flexible. On the other hand, the transition from being a student teacher to being a full-time teacher can be a stressful encounter (Putter, 2003), due to new teachers' high and unrealistic expectations. Age, therefore, needs to be observed in its interactive association with other variables, such as position held or type of school.

*Years of teaching experience:* As was mentioned before, South African studies have indicated new curriculum approaches as a possible stressor among teachers (Collins & Parry-Jones, 2000). Educators who are set in their ways could find it more difficult to accept curriculum changes and new teaching approaches, so years of experience could have an effect on stress (Moriarty et al., 2001). A study by Aftab and Khatoon (2005) investigated the relationship between years of teaching experience and teachers' stress. They found that educators with between six and 15 years of experience, had more stress due to factors such as changing circumstances outside schools to improve children's lives, helping learners with their problems, finding time to achieve personal goals, lack of professional support, and fulfilling tasks essential to student learning. In general, educators with five years or less experience indicated the least stress from these factors. It may be that more is expected of educators in the six to 15 years group than of those with less experience or those who are older and more respected. Aftab and Khatoon (2005) found a significant relationship between the different subgroups of teachers' experience and their occupational stress, indicating that the stress in teachers increased with the years of their teaching experience.

#### *Type of school*

Monteith, Smith, and Marais (2001) found that differences in perceptions of stress exist among teachers in different schools.

Khoza and Milner (2008, p.158) defined school climate as, “the set of internal characteristics that distinguishes one school from another and influences the behaviour of students.” They also found that four school climate dimensions exist. These include the environment, which describes the relationship between the school and the community; collegial leadership, which represents the openness of the principal's leadership behaviour; teacher professionalism, which describes openness of the relationships between teachers; and lastly, academic performance, which refers to the relationship between the school, the learners and the achievement motivation within the school. According to the above authors, healthy organizations are considered to have the ability to survive within their environments and to adapt and cope with long-term challenges. An important factor that may influence the school environment and teachers’ experience of stress is the prevalence of high-risk schools and specific stressors associated with these schools (Khoza & Milner, 2008).

*High-risk schools:* Bearschank (2010) described high-risk schools as schools that are at risk of being declared dysfunctional due to their negative climate and/or poor performance. According to Khoza and Milner (2008), high-risk secondary schools in the Western Cape are those schools that were neglected during the apartheid era and where the focus is now on the restoration of these schools, rather than teacher effectiveness. Furthermore, poor matriculation results, a negative educational climate, poor morale, and violent crimes within the school are key characteristics of these high-risk schools.

School violence in such schools further seems to affect teacher stress. Recent local incidents include violent attacks on teachers (Becker & Reckson, 2005) death threats from learners (Benjamin, 2001), disruptions of classroom discipline (Morell, 2002), and traumatic events involving shootings, break-ins and gangsterism (The Democratic Alliance, 2007). The number of vandalized schools from 2007 to January 2010 totalled 151 (WCED Media Release, January 11, 2010).

Bashir, Khan, Qureshi, and Qureshi (2013) found that the location of the school was a stress-provoking factor for teachers, therein that the location of the school determines the type of facilities in the classrooms, multimedia, class sizes, classroom space, economic status of the children, and interruptions such as noise from outside. Jackson, Williams, Stein, Herman, and Williams (2010) posited that resource inequality in South Africa persists as many black people continue to live on the outskirts of urban areas, which are the least developed sections of the city. These areas are seen as informal settlements where there is a lack of electricity and running water. Such shortages may serve as sources of stress as the ripple effect may be felt by all operating in the environment, including teachers. Stress experienced by teachers has equally undesirable consequences for their work environment, since it affects the learning environment and hinders the achievement of educational goals (Van Tonder & Williams, 2009).

*Special needs education:* according to the South African Schools Act 84 (1996), internal educational changes demand the enrolment of learners from grades 0 to 12, as well as changes to an inclusive education system, which allows for the inclusion of learners with special needs at schools (Eloff, Engelbrecht, & Swart, 2002). Brown, Howcraft, and Jacobs (2009) mentioned that after the apartheid era in South Africa, inclusive education is viewed as a transformational tool that can contribute to a democratic society.

Van Dick and Wagner (2001) stated that special education can be more demanding than mainstream education and the Teacher Education Division of the Council for Exceptional Children stated that as many as 30,000 special education teachers resign annually to escape the stressful, special school environment (Brown, Howcraft, & Jacobs, 2009). Putter (2003) found that many special education teachers report frequent and strong manifestations of job-related stress and they found significant differences between regular (mainstream) classrooms and special education teachers' perceptions regarding causes of stress.

Mainstream teachers reported learner discipline and work overload to be the most significant causes of stress, whereas the special education teachers perceived excessive paperwork as the greatest cause of stress (Brown, Howcraft, & Jacobs, 2009). Putter (2003) also observed that there are differences between special schools and ordinary education, but that learner violence is significant in both types of education. Other stressors commonly experienced by teachers in a special education classroom are performance pressure to achieve the same results as for mainstream schools, lesson planning, collaboration with colleagues and parents, and role conflicts or role ambiguity in comparison to teachers in mainstream classrooms (Gersten, Keating, Yovanoff, & Harris, 2001).

The type of learner that attends LSEN (Learners with Special Educational Needs) schools is often the learner with behavioural and emotional difficulties. The challenges associated with this type of behaviour tend to intensify the stress levels of teachers (Putter, 2003) and furthermore, most teachers in special schools deal with the direct effects of poverty, abuse, and neglect (Child Care Act, 1983).

### **The Person-Environment Fit Theory (P-E fit)**

The majority of reported teacher stress studies focus on the fit or misfit between the individual's resources and the environmental demands placed on the teacher (Dalgard, Mykletum, Rognerud, Johansen, & Zahl, 2007). Stress theories report on various environmental or job factors as potential stressors and a limited number of changeable personal factors that could make the teacher more or less able to cope with the environmental factors (Dalgard et al., 2007). Shipp and Jansen (2011) referred to the Person-Environment Fit theory of French, Caplan and Harrison (1982). This theory is based on Social Psychology's widely accepted approach that behaviour is a function of both the person and the environment.

Research on the Person-Environment Fit orientation suggests that the relationship between individual characteristics and environmental characteristics predict attitudes and

behaviour. Muchinsky and Monahan (1987) observed whether a good fit the one day will be a good fit the following day, depending on the strength of the variables on which matches are made. Some characteristics were found to be more unpredictable, for example, while fit in terms of teachers' personality factors may be relatively stable, a fit in terms of value resemblance may change over time. For Schneider, Smith, and Golstein (2000), the Person-Environment Fit model speculates that there are characteristics of organizations that have the potential to be harmonious with characteristics of individuals, and that the individuals' attitudes and behaviours will be influenced by the degree of congruence or fit between individuals and organizations (Roberts & Robin, 2004). Therefore, the general assumption underlying the Person-Environment fit model is that positive attitudes and behaviours are a function of the compatibility of individuals to their environments (Roberts & Robin, 2004).

Finally, according to Champoux (2000), some pressure is necessary for people to perform effectively, but teachers who experience excessive pressure may experience distress, which results in poor decision making, lowered self-esteem, low job satisfaction, and lack of commitment in terms of remaining in the profession. A number of studies reported a relationship between teacher burnout and coping strategies in stressful situations (Beckett, 2011) with coping strategies such as avoidance and distancing strategies found to be associated with higher levels of stress, emotional exhaustion, and depersonalization (Austin, Shah, & Munce, 2005).

In the above section, perceived stress and brief outlines of theoretical conceptualizations of functional and dysfunctional stress were described. Attention was given to occupational stress, and more specifically, the stress of teachers within the South African context. Furthermore, the influence of demographic factors contributing to teacher stress was described. When the question is considered about which teachers employ mostly adaptive and which mostly maladaptive coping strategies in coping with the demanding teaching reality in South Africa, or why some teachers stay in the profession and cope well while others cannot

manage and leave, researchers have suggested that personal characteristics such as a sense of self-efficacy may play a role (Pajares, 2003). Self-efficacy will, therefore, be discussed below.

### **Self-Efficacy**

For Bandura (1986), the ability that is most distinctly human is that of self-reflection and is, therefore, considered a prominent feature of the social cognitive theory (Pajares, 2002). Through self-reflection, people make sense of their experiences, explore their own cognitions and self-beliefs, engage in self-evaluation, and adapt their thinking patterns and behaviour accordingly. Of all the most important thoughts that affect human functioning and are at the core of Bandura's theory, are self-efficacy beliefs (Pajares, 2002).

According to Margolis and McCabe (2006), self-efficacy is generally defined as the belief in one's competencies to achieve a goal or a planned outcome. They stated that people with a strong sense of efficacy are more likely to challenge themselves with difficult tasks and to be intrinsically motivated. These individuals will present a high degree of endeavour in order to meet their commitments and attribute failure to aspects which are in their control, rather than blaming external factors. Self-effective people also recover quickly from setbacks and eventually are more likely to achieve their personal goals, while people with low self-efficacy believe they are incapable of being successful and thus are less likely to make a determined effort and may consider challenging tasks as threats that are to be avoided. Margolis and McCabe concluded that people with poor self-efficacy have low aspirations, which may result in disappointing performances and subsequently becoming part of a self-defeating feedback cycle.

According to Bandura (1986) self-efficacy beliefs can serve as a self-regulatory mechanism in human beings that provide the potential for self-directed changes in their behaviour. The manner and degree to which people self-regulate their own behaviour involve the accuracy and consistency of these self-monitoring resources (Pajares, 2002). Bandura's

key arguments regarding the role of self-efficacy beliefs in human functioning were that people's level of motivation, mood states, and actions are based more on what they believe than on what is actually true (Bandura, 1997). For this reason, how people behave can often be better predicted by the beliefs they hold about their capabilities, than by what they are actually accomplishing, hence the role of their self-efficacy perceptions to help determine what individuals do with the knowledge and skills they have. Bandura (2000) stated that the efficacy belief system is not a global trait, but a differentiated set of self-beliefs linked to particular domains of functioning. Multi-domain measures reveal the patterns and degree of people's sense of personal efficacy.

King (2008) cited extensive research that reported the influence of self-efficacy on people's development of healthy habits; on how much effort they invest in coping with stress; on how long they persist in the face of obstacles; and on how much stress and pain they experience. The author came to the conclusion that self-efficacy helps individuals in unsatisfactory and demanding situations by steering them to believe that they can succeed.

Despite the evidence on the salutary role of self-efficacy, there seems to be a paucity of research on the role of self-efficacy in teachers' management with stress in the educational sector and in their choice of coping strategies. Such limited research on teachers' self-efficacy could be seen as a "gap" in knowledge that a study such as the present one addressed.

### **Coping self-efficacy**

Coping self-efficacy (CSE) refers to an individual's beliefs about one's ability to cope with external stressors. During the process of secondary appraisal, the individual judges that an outcome is controllable through coping and addresses the question of whether or not he or she believes that they can carry out the requisite coping strategy (Lazarus & Folkman, 1984). In addition, high levels of CSE have been associated with better psychological adjustment to highly stressful life changes and events such as ageing (Kraaij, Garnefski, & Maes, 2002),

chronic disease (Chesney, Neilands, Chambers, Taylor, & Folkman 2006) and peer aggression among adolescents (Singh & Bussey, 2009). According to Bandura, (1997) people with higher levels of self-efficacy beliefs tend to approach challenging situations in an active and persistent way, whereas those with lower levels of self-efficacy beliefs tend to direct energy to maintain emotional distress.

### **Teacher self-efficacy**

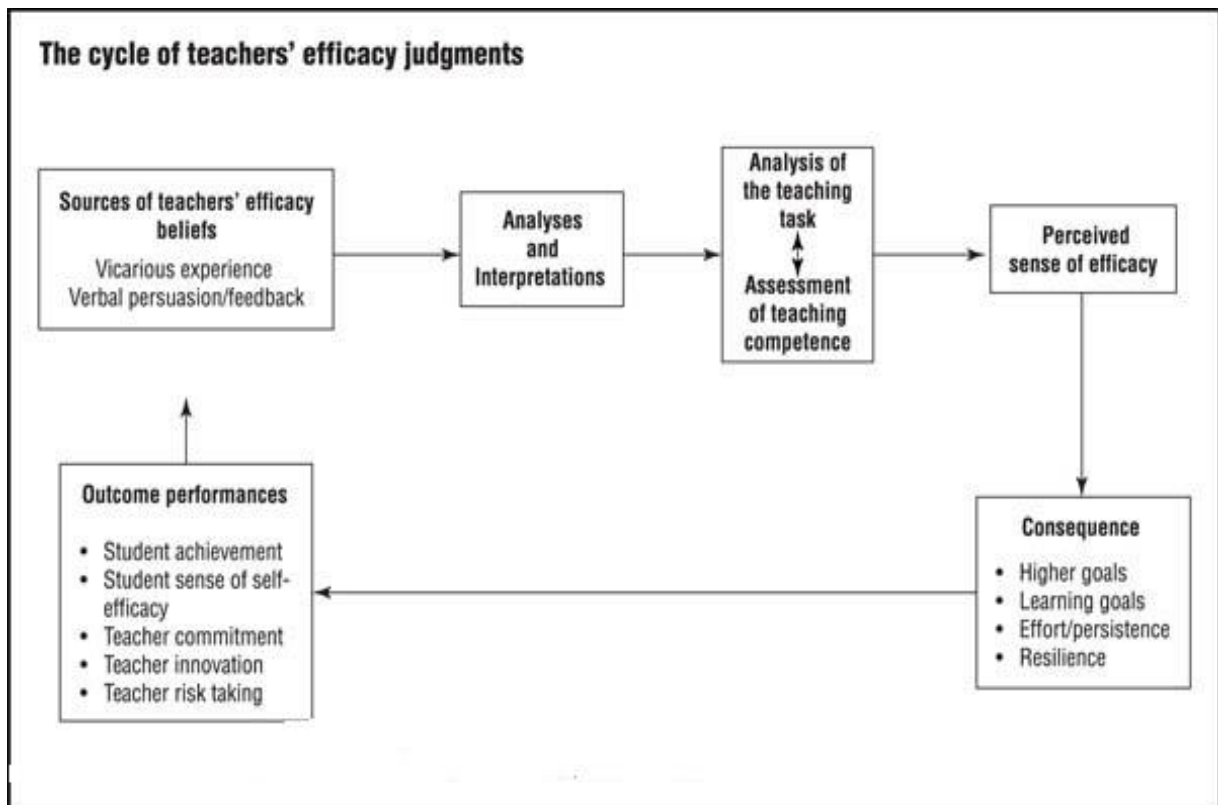
Teachers' self-efficacy, described by Woolfolk and Hoy (2003) as their perceptions about their own capabilities to foster students' learning and engagement, has proved to be an important teacher characteristic, which has often been correlated with positive student and teacher outcomes. Woolfolk and Hoy (2003) also found that efficacy judgments are specific to the teachers' individual situation (subject taught, teaching and managerial skills, knowledge, students, class size, etc.) and less affected by the organization.

According to Woolfolk and Hoy (2003) teachers with a high sense of efficacy about their teaching capabilities may find it easier to motivate their students and enhance their cognitive development. These teachers may also be able to recover from setbacks and are willing to experiment with new ideas or techniques. Low efficacy teachers may rely more on a controlling teaching style and be more critical of students. It was also found that schools where staff members collectively judge themselves capable of promoting academic success, created a positive atmosphere for development that promoted academic attainment regardless of whether or not they served predominantly advantaged or disadvantaged students (Woolfolk & Hoy, 2003).

Self-efficacy and stress are often related concepts in research. In Lazarus' cognitive model of stress (Lazarus & Folkman, 1984) personal beliefs such as self-efficacy are seen as critical in evaluating demands from the environment. Each external demand is evaluated as either a threat or a challenge and people with high self-efficacy beliefs are more likely to evaluate the demands as a challenge rather than a threat (Bandura, 2011).

Furthermore, according to Gibbs (2000), there are four kinds of self-efficacy in teachers, each of which is instrumental in explaining how teachers teach and their willingness to persist when facing stressful situations. Although there is a lack of research regarding these factors, they are considered to be important indicators of teacher effectiveness. These factors include: *behavioural self-efficacy*, which is the self-belief in one's capability to perform specific actions pertaining to the teaching situations; *cognitive self-efficacy*, which is the self-belief in one's capability as a teacher to control one's thinking in specific teaching situations; *emotional self-efficacy*, the self-belief in one's capability as a teacher to control one's emotions in specific teaching situations; and *cultural self-efficacy*, which is the self-belief in one's capability as a teacher to manage situations in a culturally-appropriate way and to adapt to specific teaching situations by being inclusive and unbiased in this regard.

A model of teacher self-efficacy was developed by Tschannen-Moran, Woolfolk-Hoy, and Hoy (1998), identifying the ways in which efficacy judgments can be the result of the interaction between teachers' analysis of the teaching task in context, and their assessment of their personal teaching capabilities as they relate to the task. See Figure 1 below.



**Figure 1:** *The cycle of teachers' efficacy judgments (Tshcannen-Moran et al., 1998)*

As a consequence of a perceived sense of efficacy, teachers achieve higher goals, put more effort and persistence into achieving their goals, and display more resilience. In return, the results of teachers' perceived self-efficacy are higher student achievement and higher teacher commitment and innovation. These results serve consistently as vital sources of self-efficacy (Christou, Phillipou, & Menon, 2001)

### ***Sources of self-efficacy for teachers***

Margolis and McCarbe (2006) identified four sources of teacher self-efficacy.

***Mastery experiences: mastery experience*** is described as an individual interpretation of the results of one's performance, in which successful experiences boost self-efficacy, while failures erode it (Margolis & McCarbe, 2006). Mastery experiences are the strongest sources of self-efficacy. If people experience only success they come to expect effortless results and are therefore easily discouraged by setbacks and failure. Resilience is built by learning how to manage failures so that challenges are enlightening rather than intimidating (Bandura,

2012). The self-confidence of teachers who experience positive feedback will improve and their determination and task orientation will result in increased self-efficacy beliefs (Pajares, 2003)

***Vicarious experience:*** according to Kamunima (2014) observing a peer succeed at a task can reinforce beliefs in one's own abilities. Vicarious experiences relate to the results produced in a person by the observation of accomplishments of others. Individuals have learning experiences when they observe the modelling of a certain task (Bandura, 2012; Pajares, 2003) therefore, vicarious learning refers to social modelling whereby a person's belief is influenced by similar others who succeed by perseverance and persistence. Such learning elevates the observer's motivation and beliefs in their own capabilities (Kamunima, 2014; Pajares, 2003).

Vicarious experiences are thus obtained by means of observing modelled events by other successful teachers who have mastered specific tasks. Effective learning takes place when observing models that are well-versed in appropriate and efficient ways of performing tasks. Competent models can teach effective strategies for dealing with challenging and threatening situations. The nature and the complexity of the task will also indicate how a task is handled (Bandura, 1997; Taylor & Reyes, 2012). The value of mentoring and supervision is thus clear when a teacher who struggles to cope with a stressful encounter can benefit from observing an experienced and knowledgeable colleague.

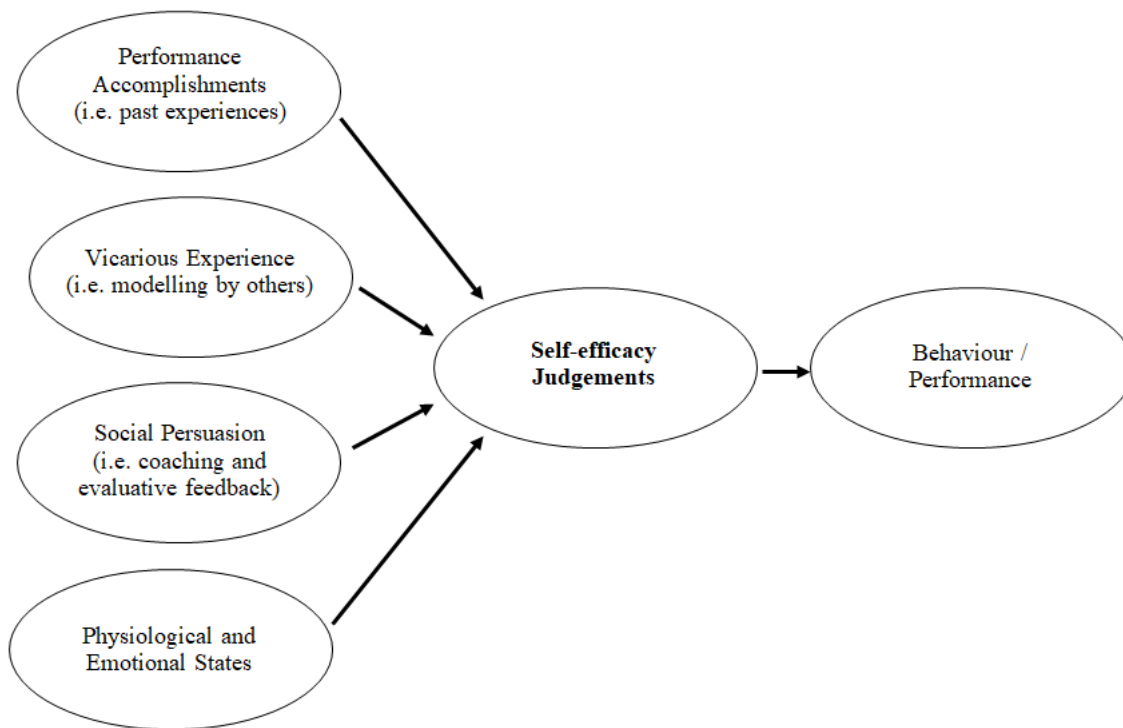
***Verbal persuasion:*** individuals can boost their self-efficacy with credible communication and feedback to guide them through a task or to motivate them to give their best effort. According to Margolis and McCarbe (2006) individuals create self-efficacy beliefs from verbal persuasion that they receive from others, e.g., exposure to constructive verbal criticism or vicarious learning experiences. Verbal persuasion can motivate teachers by means of messages inspiring faith in their ability to manage stress effectively and to achieve good

results. Teachers who receive supportive information from others, experience more confidence about their personal performance after such support. Negative persuasion can defeat and weaken self-efficacy beliefs. When teachers are dominated by employers, supervisors and their colleagues, their self-efficacy levels decrease (Kamunima, 2014).

***Psychological or emotional state:*** a positive mood or a negative psychological states such as anxiety, nervousness, stress, arousal and fatigue, can either boost or deteriorate one's beliefs in self-efficacy. A certain level of positive emotional affect can create an energizing feeling that can contribute to improved performance. Individuals can maintain their self-efficacy by reducing the impact of stress and anxiety surrounding stressful events (Margolis & McCabe, 2006) and as a result, the feeling of accomplishment or satisfaction experienced from dealing with a difficult situation, may strengthen their self-efficacy beliefs.

A physiological arousal conveys information through judgments and appraisal processes (Mathebula, 1992) and Senemoglu, Demirel, Yagci, and Ustundag (2009) found that strong negative emotional arousal, lowers teachers' performance expectations. Defeating experiences could make teachers feel tense or disturbed when they encounter complex situations, which could influence their performance. Under such circumstances, a person that experiences high levels of perceived efficacy will make more effort, work faster, and become more focused than a person with lower levels of perceived efficacy (Senemoglu et al., 2009).

The dynamics of the four sources of self-efficacy discussed above are demonstrated in Figure 2.



**Figure 2:** Sources of Self-efficacy information (Margolis & McCarbe, 2006).

### ***The effect of self-efficacy beliefs on teachers' performance***

The following outcomes of a sense of self-efficacy have been mentioned in literature:

- Self-efficacy beliefs influence the choices teachers make and the courses of action they follow, such as the choice of coping mechanisms in managing their perceived stress. Teachers engaged in challenging tasks with a sense of self-efficacy will feel competent and confident and will associate themselves with those of equal status. Experience of such specific situations serves as an essential influence of what a teacher chooses to attend to when dealing with adversities (Carroll et al., 2009).
- Beliefs of personal competency also assist teachers to determine how much effort they would spend on an activity, and the higher their sense of efficacy, the more effort, persistence, and resilience they would invest (Pajares, 2003; Schunk & Zimmerman, 2007). When a task is appraised as a challenge, one is more likely to select an effective coping strategy and to persist at managing the task. Self-efficacy thus affects

the perception of external demands and mediates the relationship between external stressors and psychological stress (Chemers, Hu, & Garcia, 2001).

- Teacher's beliefs in their instructional efficacy can influence the kind of learning environment they create to facilitate student's learning. Teachers' perceptions of their teaching competency, related to their personal capabilities to deal with adverse situations, are both sources and outcomes of efficacy (Chacon, 2005).
- In a study examining academic stress among engineering students, results indicated that self-efficacy is a better predictor of academic success than stress. Chacon (2005) found that self-efficacy beliefs can become self-fulfilling prophecies for beliefs of either capabilities or incapability.
- Self-efficacy plays a role in human self-development, adaptation and change at both individual and collective levels (Bandura, 2012). Factors on personal, environmental and cognitive levels that influence teachers' behaviour and their beliefs in their ability to deal with demands, can either motivate or discourage their efforts and also determine the attempts a teacher would afford to the task at hand (Bandura, 2012).

In preceding discussions the close association of self-efficacy with the coping construct has been explicated. Coping with stress the strategies used in the coping processes will therefore be discussed below.

## **Coping and Coping Strategies**

### **Coping**

Weiten (2014) viewed coping as a person's active attempts to manage, reduce or tolerate demands created by stress, and according to Lazarus and Folkman (1984, p.141) coping is the, "constantly changing cognitive and behavioural efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person."

Two conceptualizations of coping that are prominent in all coping literature are problem-focused coping, or active coping, and emotion-focused coping.

Littleton, Horsey, John, and Nelson (2007) and McLeod (2010) were of the opinion that *problem-focused coping* (also called active coping) targets the causes of stress in practical manners that focus on the problem or stressful situation causing stress and thereby directly reducing the stress. Examples include seeking information about the stressor, making a plan of action and concentrating on steps to direct or resolve the stressor at hand (Littleton et al., 2007).

*Emotion-focused coping* focuses on managing the emotional discomfort associated with the stressor and include reframing one's emotions related to the stressor, seeking emotional support and venting emotions. According to Stanton, Kirk, Cameron, and Danoff-Burg (2000) emotion-focused coping is the management of an individual's emotional distress related to the stressful event, rather than the cause of the stress. Emotion-focused coping involves self-reflection and the purpose is to assist with expression and to process emotions to re-appraise a persistent stressor. Stanton et al. (2000) and Folkman and Moskowitz (2004) stated that emotions are fundamental to the coping process, and a first task is to control negative emotions that may obstruct active forms of coping.

Although it has been argued by some that problem-focused coping is more adaptive in controllable situations, whereas emotion-focused coping is more adaptive in uncontrollable situations, Littleton et al. (2007) reported that both problem-focused and emotion-focused approaches have the potential to be adaptive. When the nature of the stressful event fits the individual's coping abilities, people experience less psychological symptoms than when there is a lack of fit (Park, Folkman, & Bostrum, 2001). The latter authors further indicated that although it is considered maladaptive to use problem-focused coping when a situation is unchangeable or to apply emotion-focused coping to a situation that can be changed, effective coping uses an appropriate combination of strategies for the situation. For example, with grief

it may be adaptive to initially engage in emotion-focused coping to acknowledge, process and express the loss and then, after emotional balance returns, to engage in more problem-focused coping to deal with future plans (Park, Folkman, & Bostrum, 2011).

Approach versus avoidance coping is also considered in coping theories. *Approach coping* focuses on the stressor itself and a person's reaction to the stressor. Roth and Cohen (1986) described approach orientated coping as a person's relative readiness to perceive anxiety-arousing situations and involves the active seeking of knowledge, the careful appraisal of the situation, and the planning of an appropriate action. Therefore, a person can either change their situations or manage their emotions in relation to a stressful situation. Hosier (2013) identified two types of approach coping strategies: task orientated approach coping, which involves choosing and implementing as many practical solutions to the problem as possible, and emotion orientated approach coping, which involves managing one's psychological stress and/or emotional responses to the anxiety-provoking situation. If people decide that change is possible and within their control, they may use task orientated coping strategies. If, on the other hand, they regard a change in their situation to be impossible, they may use emotion orientated coping strategies (Littleton et al., 2007).

*Avoidance coping* is the attempt to discard or deny that the stressor exists and to refrain from any attempts to change it or to distract oneself by engaging in tasks not associated with the stressor (Stanton et al., 2000). Avoidant coping strategies are typically maladaptive for extracting social support or engaging in problem-solving activities (Min, Farkas, Minnes, & Singer, 2007). Researchers have indicated that avoidance involves momentarily suppressing thoughts, but leads to an intrusion of negative thoughts over time (Wenzlaff & Wegner, 2000). According to Gibbons, Dempster, and Moutray (2011) this form of coping is ineffective and was found to be the strongest predictor for unfavourable well-being, poor psychological health, and depression (Futa, Nash, Hansen, & Garbin, 2003; Min et al., 2007) and is a particularly problematic approach to coping with the results of a stressful event

(Krause, Kaltman, Goodman, & Dutton, 2008). Furthermore, although there is evidence that in some situations people have a strong preference for either approach or avoidance responses, there can be a rapid alternation between the two orientations (Aldwin & Cohen, 1986).

According to Lopez (2014) the previously mentioned transactional model of stress and coping indicated that stress levels can be minimized by helping stressed individuals to change their awareness of stressors, to use appropriate coping strategies, and to improve their confidence to overcome and to manage a stressful situation. Coping strategies will be discussed next.

### **Coping strategies**

Copings strategies are specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimize stressful events (Carver, 1997; Dardas & Ahmad, 2013). Coping strategies can both be successful or unsuccessful and result in more perceived stress (Kao & Craigie, 2013).

### ***Adaptive versus maladaptive coping strategies***

Adaptive coping strategies operate to reduce stress and endorse long-term benefits, whereas maladaptive coping may reduce the level of stress in the short term, but can affect physical and psychological health in the long term (Bartram & Gardner, 2008). According to Compton and Hoffman (2013) adaptive coping, also described as positive coping, are coping behaviours that are effective in reducing the burden of stress in the short term and that bring relief to long-term stress through the building of resources that could buffer stressful situations. Compton (2005) identified three dimensions of positive coping, including an individual's coping style, their coping resources, and the coping strategy used to deal with stress.

Coping styles include emotion-focused, problem-focused, avoidance, and also proactive coping, while coping resources refer to the “tools” at our disposal when we meet stressful challenges (Young, Klosko, & Weishaar, 2003). According to Compton (2005) these resources can be either external or internal, wherein internal coping resources include positive thinking and optimism, perceived control, self-efficacy, the cognitive appraisal of events, and perceived control, while external coping resources refer to the availability of social support or the existence of a support structure.

Coping strategies can either be behavioural, such as seeking social support or physical, such as meditation or relaxation exercises (Compton, 2005). Research consistently showed that people, who use established coping mechanisms are happier, enjoy better mental health, and more gratifying personal relationships (Mounier & Andujo, 2003) whereas maladaptive coping responses (e.g., avoidant coping) contribute to poorer outcomes (Futa et al., 2003). The way in which individuals react to or cope with stressful situations influences the long-term impact of those stressors and research found that differences in coping are important indicators of psychological adjustment (Min et al., 2007).

### ***Adaptive coping strategies***

*Social support:* Barry and Wentzel, (2006) viewed social support as interaction in which people understand each other’s needs and will try to assist one another in an adverse situation. Bateman (2009) recognized two types of social support: *emotional support* is the ability to show empathy, compassion, and genuine concern for another person. Emotional support is born out of real, authentic relationships with other people where both parties give and receive emotional support freely; and *instrumental support* is the ability to offer help or assistance in a tangible and/or physical way, such as providing money to someone who has lost their job or helping someone who has been bedridden by preparing dinner (Barry & Wentzel, 2006).

While there is much research on the effects of social support on stress, there is some disagreement on whether or not people need social support all the time or just during times of stress (Barry & Wentzel, 2006). Social support is most valuable during stressful times and the buffering hypothesis states that social support buffers or protects people from the negative effects of stress, while when someone is not under a lot of stress, they do not need the buffer of social support (Bateman, 2009).

*Positive reinterpretation:* Peale (2012) stated that positive reinterpretation is a cognitive event that occurs when a person takes a negative thought and rephrases it into a positive thought. When individuals experience adverse situations, the event can be worsened by negative thinking, which can lead to feelings of anger or fear. The most important way to stop this process is by replacing negative, self-defeating thoughts with positive, affirming thoughts and feelings. Such reinterpretation or reframing makes a threatening problem feel like a non-threatening and more controllable situation. Peale (2012) further explained that reframing in this way is also called cognitive restructuring, cognitive reappraisal, and attitude adjustment. Recent findings by Stoeber and Jansen (2011) showed that positive reframing, acceptance and humour are of the most effective coping strategies for people dealing with stress. The authors used a sample of 149 students who completed daily diary reports for 14 days, reporting the most stressful event they experienced, what strategies they used to cope with the stress and how satisfied they felt at the end of each day. Their coping strategies included using emotional or instrumental support, self-distraction, denial, religion, venting, substance use, self-blame, and behavioural disengagement. Among these, the use of social support (both emotional and instrumental), denial, venting, behavioural disengagement, and self-blaming had negative effects on the students' mood. The more students used these coping strategies in dealing with the day's most bothersome events, the less satisfied they felt at the end of the day. In contrast, using positive reinterpretation, acceptance, humour, and active coping had positive effects on their satisfaction. The more students used these coping strategies in

dealing with stress and failures, the more satisfied they felt at the end of the day (Stoeber & Jansen, 2011).

*Acceptance:* Carver (1989) and Muhonen and Torkelson (2011) viewed acceptance coping as acknowledging that a difficult situation is real and must be addressed, whereas denial coping occurs when individuals deny that a stressor exists or attempt to act as though the stressor is not real. Carver (1989) stated that although acceptance and denial appear to be on opposite ends of one spectrum, they are actually distinct processes that may be employed in conjunction with each other. Carter (1989) viewed acceptance as an adaptive coping response because the person who is accepting their situation becomes focused on dealing with the matter. Insightfulness and acceptance are likely to be beneficial when there are adequate resources available to support the individual during a stressful situation.

*Humour:* according to Abel (2002), various studies have supported the view that humour and laughter are curative for relieving tension and anxiety. Furthermore, the research found that a good sense of humour is associated with muscle relaxation, positive mood states, and general psychological health, including a strong self-concept. Abel (2002, p. 366) stated that humour could be, “a form of an emotion-focused coping technique designed to ‘distance’ oneself from negative experiences by taking one’s self or one’s experiences less seriously, thus reducing emotional reactions to threatening circumstances”.

*Religion:* religious coping has been described as a variable that may mediate a person’s experience of stress (Ano & Vasconcelles, 2005), while Koenig, McCullough, and Larson (2001) concluded that people identified as more religious had lower rates of depression and suicide. The latter authors further explained the coping value of religion to, “consider the religious view of a forgiving, merciful, all-powerful God who is in control of one’s circumstances and even the eternity that is beyond life, who is interested in people and responds to their pleas for help and assistance” (Koenig, McCullough, & Larson, 2001, p. 72). Furthermore, the meaning derived from religious beliefs and practices is considered an

important mechanism through which religion is linked to improved coping and greater mental health outcomes. This view suggested that religion can support an optimistic, positive world-view that provides meaning to life experiences, particularly during pain and suffering (Koenig, McCullough, & Larson, 2001).

Marks (2005) found that a positive relationship between dimensions of religion and factors of bio-psycho-social health exists, whereas according to Schierman and Bierman (2011) religious beliefs play a central role in the stress process as a buffering resource in preventing the effects of stress on mental health. In addition, internalized religion can reduce the stress associated with a major life event by encouraging active problem solving, promoting acceptance, turning the problem over to God, and focusing on others in poorer circumstances than oneself (Koenig, McCullough, & Larson 2001).

*Planning:* according to Carver, Sheier, and Weintraub (1989) planning means to actively think of ways to cope with a stressor. Planning, therefore, involves considering action strategies, thinking about which steps to take, and how best to deal with the problem. Skinner and Zimmer-Gembeck (2009) stated that planning is considered a problem-focused strategy that occurs during secondary appraisal, whereas active coping occurs during the implementation phase. Active coping involves implementing (the planned) active steps to try to remove or minimize the effects of the stressor and it includes initiating direct action and increasing one's efforts to deal with the stressful situation at hand (Aitken, 2011; Carver, Sheier, & Weintraub, 1989; Skinner and Zimmer-Gembeck, 2011).

### ***Maladaptive coping strategies***

Mahmoud (2011) stated that maladaptive coping is the unsuccessful resolution of stressful situations and is associated with anxiety and depression, while there is also evidence that the more frequently people use passive coping strategies, the higher their levels of anxiety and depression are. Maladaptive coping behaviours can stem from poor life satisfaction and maladaptive thinking patterns.

Carver (1997) identified six types of maladaptive coping strategies.

*Self-distraction:* Snyder (2001) viewed distraction as not only a way of consciously diverting attention elsewhere, but also as a strategy for coping with stress. Distraction is used when managing harmful emotional states such as anxiety and stress. Because a person can only attend to a limited amount of information, attention focused, for example, on more positive aspects, reduces the amount of attention devoted to a negative mood state. The effectiveness of distraction as a way of coping varies depending on the nature of the stressor, the strength of the stressor, and the intensity of the emotional response. Pleasurable distractions may be somewhat effective in regulating one's mood in the face of uncontrollable stressors.

Snyder (2001) also found contrasting evidence for the effective use of distraction as a way of coping with stress. Some people may experience distraction as an attempt to force oneself into a different mood state or to suppress stressful feelings; while research indicated that these attempts can be ineffective and counter-intentional. In this regard, Wenzlaff and Wegner (2000) found that attempting to suppress a thought related to negative emotions may, in fact, lead to an increase rather than a reduction of these thoughts.

*Denial:* according to Cohen, Wiley, and Sons (2013) denial is known as an avoidance strategy that can be beneficial or harmful to mental and health outcomes. Statements about denial are declarations that a stressful encounter did not happen, does not exist, is not true, or is not aware. According to McLeod (2008) denial involves blocking external events from awareness. A different form of denial is to deliberately not expose oneself to certain unpleasant information, in which someone would, for example, make a conscious decision to ignore the sources of such information. If a stressful encounter is simply too much to handle, the person refuses to experience it, for example, smokers may refuse to admit to themselves that smoking is bad for their health. Cohen et al. (2013) further explained that denial is a defence mechanism for reducing anxiety, in which a person is faced with a fact that is too

uncomfortable to accept and rejects it instead, insisting that it is not true despite what may be overwhelming evidence.

*Substance abuse:* Collins, Gollnisch, and Morsheimer (2004) stated that life stress is strongly related to substance abuse among various adult samples engaging in cigarette smoking, alcohol abuse and the use of psychotropic drugs. Substance use is typically seen as a short-term coping strategy that provides temporary relief from distress, but leaves the original source of the distress unchanged and is, therefore, maladaptive. Collins et al. (2004) stated that people who experience high levels of stress may use substances to manage their stress or, as a result of their socialization, to use coping strategies that provide only temporary relief.

Studies have linked stress to alcohol and drug addiction and chronic stress is a well-known substance abuse risk factor (Dawes et al., 2000). Researchers suggested that stress may cause changes within the brain and the potential to lead to addiction. For example, the Stress Coping Model of Addiction proposes that the use of addictive substances serves to both reduce negative affects and increase positive emotions, thereby reinforcing drug taking as an effective, but maladaptive, coping strategy (Dawes et al., 2000). The popular Tension Reduction Hypothesis (Sher & Levenson 1982) and the Self-medication Hypothesis (Khantzian, 1985) have proposed that the motivation to enhance mood is strong during acute and chronic stress states. Initially, a drug may be used to modulate tension or distress, but subsequently, with repeated use, it may become a more ubiquitous response for both stress relief and mood enhancement (Rajita, 2001). According to Dawes et al. (2000) there is substantial evidence that stressful events can increase a person's vulnerability to substance use, particularly when life stress is high and coping strategies are impoverished. For example, work environments characterized by high job strain were found to increase the likelihood of developing drug and /or alcohol dependency among female nurses (Collins et al., 2004).

*Self-blame:* according to Voth and Sirois (2009) self-blame is an avoidant coping strategy. The authors found that avoidant coping mediated the relationship between self-blaming

thoughts and psychological adjustment. Self-blame was directly related to avoidant coping, which in turn, was associated with poor psychological adjustment. Self-blame is seen by the mentioned authors as a counterfactual form of thinking when dealing with stressful situations.

Littleton, Heather, Breikopft, and Radecki (2006) distinguished between two types of self-blame. *Behavioural self-blame*, on the one hand, refers to someone regretting the actions they have done and feeling they should have done something different about the situation they experience. *Characteristic self-blame*, on the other hand, is when someone feels there is something inherently wrong with him/herself as a person. Being unable to cope with difficult learner behaviour or a challenging situation at school can result in teachers blaming themselves or feeling incompetent in dealing with the situation.

Further examples of maladaptive coping strategies have been identified by Bartram and Gardner (2006), such as self-destructive behaviours, risk-taking behaviours, comfort eating, procrastination, the use of displacement activities such as exercising and excessive sleeping to avoid problems, wishful thinking, projecting anger and frustration onto others, detachment, criticism, isolating oneself, and trying to control emotionally expressive behaviours, for example, trying not to cry. Littleton, Horsey, John, and Nelson (2007) reported that the identification of adaptive and maladaptive coping strategies following stressful events has been the subject of many scientific enquiries.

In the preceding discussion, coping and the strategies used to cope with demanding circumstances, either adaptive or maladaptive, were considered. Since the coping construct in this study will shed light on how some teachers manage the demands made on them by the educational context, some findings in this regard will be discussed below.

### **Coping of teachers**

An American study on coping strategies of teachers found that Californian teachers who cope successfully with the stresses of teaching, rely on supportive relationships with family and friends; they choose positive attitudes and humour to uphold themselves; and they manage to

spend time on solitude, reflection and other activities such as exercise and hobbies (Richards, 2012). The leading stress management techniques among Zimbabwean teachers were spending time and creating leisure activities with friends and relatives in attempt to cope with stress in teaching. A small group of teachers in the same study reportedly absented themselves from work, while others said that they sometimes refused to teach difficult classes (Mapfumo & Chitsoko, 2012). Smith (2012), after studying coping mechanisms among South African teachers, reported that most teachers avoided stressful situations where possible or took confrontational actions to face the pressures and stressors. Other coping mechanisms identified include problem-solving, the use of social support, and the ability to accept failure.

In the course of implementing educational policies, coping mechanisms adopted by teachers are varied but can be generally classified into four types: personal coping mechanisms, professional coping mechanisms, social coping mechanisms, and institutional coping mechanisms (Murray-Harvey, Slee, Lawson, Silins, Banfield, & Russell, 2010). *Personal coping mechanisms* are described as efforts by teachers to focus on the positive aspects of their work (Brackenreed 2011; Murray-Harvey et al., 2010). This type of coping involves accepting the nature of the working environment and adapting one's attitude in order to set goals that are realistic and achievable and therefore, Lipsky (2010) called these efforts attitudinal coping responses.

With regards to *professional coping mechanisms*, scholars agree that teachers cope with their work conditions and stress by being well-organised in terms of preparation and planning, as well as mastering the educational content of their subjects by means of planned problem-solving (Brackenreed 2011; Yeung 2012). According to Sharplin, O'Neill, and Chapman (2011) such professional skills and attitudes are realised after a lengthy process of professional socialisation of teachers.

*Social coping mechanisms* involve talking about their problems with family, colleagues and friends, and to reflect on their situations as a coping mechanism (Murray-Harvey et al.,

2010). The importance of *institutional coping mechanisms* such as communicating with colleagues, supervisors, and using other formal structures within the school system is a common coping mechanism among educators that is generally encouraged among educators (Brackenreed 2011; Murray-Harvey et al., 2010). Such a strategy gives the teachers an opportunity to share common experiences and solutions.

According to Engelbrecht, Swart, and Eloff (2001), within the South African context, needs and coping strategies of mainstream teachers who have learners with special needs in their classroom, have either remained largely unidentified or have taken second place to the development and implementation of educational policy. These authors who investigated the stress and coping strategies of South African teachers working with learners with Down's syndrome in inclusive classrooms, reported three main types of coping strategies: firstly, the use of problem-focused strategies such as planning and implementing a strategy to solve a problem; secondly, the teachers made use of collaborative strategies including discussing the problem with colleagues and parents; and thirdly, emotion-focused strategies such as maintaining a sense of humour and relying on religion were also reported as effective coping strategies used by these teachers (Engelbrecht, Swart, & Eloff, 2001).

### **Research Question and Aims**

In the above exposition, a theoretical outline of perceived stress, self-efficacy and coping strategies, as well as these factors pertaining to South African teachers, was presented. Based on possible research gaps that have been identified in the literature discussed above, attention was given in the study to the sense of self-efficacy and the adaptive coping strategies of teachers and to whether or not these factors had an influence on their perceived stress. A specific research question that emerged was: *Would a sense of self-efficacy and using adaptive coping strategies have a significant influence on the perceived stress levels of teachers, in other words, what are the relationships between perceived stress, a sense of self-*

*efficacy and the coping strategies of South African teachers?* This research question will be investigated by means of the aims of the research, which are:

The *general aim* of this study was to determine the levels of and statistical relationships between perceived stress, coping self-efficacy, and adaptive coping strategies of teachers in the educational context.

The *specific aims* were to:

- determine how the constructs in this study are conceptualized in literature;
- determine the perceived stress levels of teachers, their levels of coping self-efficacy, of adaptive coping strategies, and the statistical relationships between these variables analysed by means of structural equation modelling; and
- determine whether mediating or moderating variables could be identified in the relationships between constructs.
- specify, by means of Latent Profile Analysis, teachers' profiles based on their levels of perceived stress and adaptive coping strategies.

In the following section, a detailed outline of the research methodology and methods used will be discussed.

## **Research Methodology**

In this study, a literature study, as well as an empirical investigation, was done that will be described below.

### **Literature study**

According to Fink (2014) a literature study reviews previously published surveys, academic scripts, scholarly articles, or online journals relevant to an area of research or theory. The reasons for using a literature study are to provide a descriptive summary and a critical evaluation of these works with regards to the research problem being investigated. Furthermore, literature reviews are employed to provide an overview of relevant sources that

were explored while researching a particular topic, and to demonstrate how the findings of one particular research study fit within a larger field of study.

The literature in this study was used to critically evaluate and support the findings reported in this study. The relationships found between teachers' perceived stress, coping self-efficacy, and coping strategies, as well as possible mediating influences of these variables, could be explained by means of a literature review.

### **Empirical study**

Empirical studies are based on the collection and analysis of primary data derived from direct observation of/or experiences in a particular field of research. Empirical research is based on both the observed and measured phenomena and derives conclusions from actual experience rather than from theory or belief (Goodwin, 2005).

This particular study aimed at utilising an empirical study by means of the following: firstly, by stating a research question to be answered; secondly, by defining the population, behaviour or phenomena being studied; and finally, to describe the processes of measurement used to study this population or phenomena, specifically the measures of reliability and validity, the use of measuring instruments, and the findings meeting the aims of the research study.

For the purpose of this study, the researcher utilised *a quantitative approach* to conduct "measurements of the real world characteristics of human experience" (Durrheim, Terre Blanche, & Painter, 2006, p.47). With this approach, statistical findings and the interrelated relationships of measurement constructs were investigated. The research thus employed a single event, cross-sectional survey design.

Because the results gained from this study can be used to widen knowledge about teacher's challenges in the educational system, the research was of a theoretical-empirical nature. The findings can also be used to improve employee wellness of teachers, or to

empower teachers in mastering challenges and, therefore, an explanatory-descriptive model was utilized (Creswell, 2009).

### ***Participants and procedures***

Sampling is referred to as, “the selection of research participants from an entire population” (Durrheim et al., 2006, p.49). In order to fit the purpose of this study, a *convenience sample* of 282 teachers from 26 schools under the jurisdiction of the Gauteng Department of Education in the Gauteng Province of South Africa, were approached for voluntary and anonymous participation in the study. The sample consisted of those participants who gave their informed consent and from whom completed questionnaires were received.

After the Gauteng Department of Education’s permission to conduct the research was granted, headmasters of schools were approached through letters and personal contact, for their permission to conduct the study at their schools. The researcher then visited the schools at a convenient time as agreed with the principal to meet the teachers and gave them full information about the research and their rights as participants therein. Teachers willing to participate were identified at these meetings, their written informed consent was obtained, arrangements made to provide them with the questionnaire booklet, and for the completed booklets to be collected by the researcher after 10 days. Participants were provided with the researcher’s contact details where she was available to assist them in any way possible.

### ***Data collection***

Each participant (teachers) received a booklet containing the following three validated self-reported questionnaires and a biographical questionnaire:

A *Biographic Questionnaire (BQ)* was devised by the researcher to obtain information about the teachers’ gender, years of teaching experience, educational background, grades and subjects taught, and the type of school where they are teaching.

*The Perceived Stress Scale (PSS)* of Cohen and Williamson (1988) was used to determine the educators' experience of stress associated with teaching. The PSS is a widely used psychological instrument for measuring the perception of stress. It is a 10 item measure of the degree to which situations in one's life are appraised as stressful. Items were designed to assess how unpredictable, uncontrollable, and overloaded respondents find their lives (Cohen & Williamson, 1988). The scale includes a number of questions about current levels of experienced stress and asks about feelings and thoughts during the last month. Each item is rated on a 5-point measuring scale ranging from never (0) to almost always (4). Items 4, 5, 7 and 8 are positively stated items and are thus reverse scored. The total ratings are summed, with higher scores indicating higher levels of perceived stress and lower scores indicating lower levels of perceived stress. Evidence for validity showed that higher PSS scores indicated greater vulnerability to stressful life-events that elicited depressive symptoms (Cohen & Williamson, 1988). Cohen and Williamson (1989) found the Cronbach Alpha coefficient for the PSS's internal reliability as 0.75. The PSS has been used in a South African study by Hamad, Fernald, and Karlan (2009), with findings that adults in South Africa demonstrate rates of perceived stress at or above levels elsewhere in the developing world. Scores ranged from 0 to 40, and the test had a Cronbach Alpha of 0.72 (Hamad, Fernald, & Karlan, 2009).

The rationale for using the Perceived Stress Scale in this study was to determine the teachers' global perceptions of perceived stress and although it can be generalized to any situation which the participant may have encountered, teachers were requested to focus on their job-related experiences over a period of about one month.

The *Coping Self-efficacy Scale, (CSES)* is a 26 item measure developed by Chesney et al. (2006). The CSES focuses on changes in a person's confidence in his/her ability to effectively cope with challenges and threatening situations. According to Chesney et al. (2006), the CSES was developed to measure individuals' evaluation of their coping self-

efficacy rather than their coping strategies *per se*. Exploratory and confirmatory factor analyses of the CSES identified three factors that became the subscales of the CSES, namely: the use of problem-focused coping; to stop unpleasant emotions and thoughts; and the use of social support from friends and family. The participants were asked to use an 11-point scale and to rate the extent to which they believe they could employ adaptive coping strategies, presented as '*sort out what can be changed, and what cannot be changed*', '*break an upsetting problem down into smaller parts*', '*look for something good in a negative situation*', and '*get emotional support from friends and family*'. Items on the scales were rated as 0 ('*cannot do at all*'), 5 ('*moderately certain can do*') and 10 ('*certain can do*'). An overall CSES score was calculated by summing the individual item ratings. A higher score indicates positive coping self-efficacy.

The Cronbach's Alpha index for each scale was good, ranging from 0.80 for support from friends and family to 0.91 for problem-focused coping and stopping unpleasant emotions and thoughts (Chesney et al., 2006). The CSES has been used in various South African studies, including a validation study of the scale within the South African context, in which a multicultural sample of 2214 adolescents and adults, both male and female participated (Van Wyk, Wissing, & Temane, 2010). Results indicated a Cronbach's alpha reliability coefficient of 0.87 and the criterion-related validity was satisfactory. This research also supported the three-factor structure identified by Chesney et al. (2006).

The CSES was included in this study since it is a scale that measures the application of self-efficacy in coping behaviour. It is thus an applied combination of two constructs and it has been validated for use in South African research, with good psychometric properties. Furthermore, the teachers were requested to focus on their work circumstances when responding to the CSES items.

*The Brief COPE Inventory* of Carver (1997) was used to determine the educators' different coping strategies for dealing with stress. The Brief COPE consists of 14 scales, with two

items each that deal with ways that people have used to cope with the stress they are experiencing in their lives. The items measured the extent to which the participant uses a specific coping strategy as well as or how frequently they engage in the specific coping strategy. The Brief COPE scales are computed as follows, with no reversals of coding: self-distraction, items 1 and 19; active coping, items 2 and 7; denial, items 3 and 8; substance use, items 4 and 11; use of emotional support, items 5 and 15; use of instrumental support, items 10 and 23; behavioural disengagement, items 6 and 16; venting, items 9 and 21; positive reinterpretation, items 12 and 17; planning, items 14 and 25; humour, items 18 and 28; acceptance, items 20 and 24; religion, items 22 and 27; and self-blame, items 13 and 26. The item scores ranged from *I haven't been doing this at all* (1) and *I've been doing this a lot* (4) (Carver, 1997). Despite the fact that the scales have only two items each, their reliability all meet or exceed the value of 0.50, regarded as minimally acceptable. This indicated the internal reliability of the abbreviated scale (Nunnally, 1978 as cited by Carver, 1997). Scoring of the scale is done by summing the scores and a higher score indicates the use of predominantly adaptive strategies.

In a study by Louw and Viviers (2010) the Brief COPE inventory was used in South Africa to explore the factors that enable police officers to cope more effectively with emotional stress. It was found that the Cronbach's Alpha coefficient for reliability in this study was between 0.86 and 0.92 (Louw & Viviers, 2010).

The rationale for using the Brief COPE in this research was its psychometric quality and conciseness. The Brief COPE scale can be used to assess teachers' responses as adaptive, or less so in their coping, by means of measuring problem-solving, positive reinterpretation, and the use of instrumental or social support, as well as denial. In this study, only the adaptive scales were used for analysis.

The Perceived Stress Scale and the Brief COPE scales are all in the public domain for use in research. For the CSES, permission was obtained from the authors.

### ***Data analysis***

The researcher electronically captured the raw data using the software program of SPSS 25 and then checked for possible errors (Field, 2005). As part of descriptive statistics, the means, standard deviations, and range of scores for the measuring instruments were determined. The psychometric properties of the scales used were determined and the correlation coefficients were calculated for which a cut-off level for statistical significance of  $p < 0.05$  was set. The Mplus Version 8.1 (Muthén & Muthén, 1998-2016) was used to examine the relationship between latent variables in order to identify and compare a measurement model, and thereafter a structural model in which the direct or indirect relationships between perceived stress, coping self-efficacy, and coping were determined. The mediating and moderating effects of certain variables on the relationship between the latent variables were determined and Latent Profile Analysis was done. A statistical consultant of the NWU assisted in the statistical analysis. The questionnaires used in this research will, in accordance with the NWU regulations for research, be securely stored by the researcher for five years and made available on request of the NWU for public scrutiny.

### **Ethical Considerations**

#### **Autonomy and respect for the dignity of the person**

In order to conduct research on participants in an autonomous and respectful manner, participation in this project was voluntary and confidentiality was upheld. An informed consent form was signed by all research participants prior to the research and after they had been informed about the nature of the research and their rights as participants. All such rights were upheld in this research including their right to withdraw at any stage. Permission to conduct the research was obtained from the Gauteng Department of Education and school principals involved. Ethical approval was also obtained from the OREC Ethics Committee at the NWU: VTC and the ethics clearance number of this committee (NWU-HS-2014-0241) will be used in all publications of the research results.

### **Nonmaleficence**

Caution was taken to ensure that no harm befell research participants as a direct or indirect consequence of research. All information obtained for the purpose of the research project and shared with third parties was done with aggregate results in which no individual can be identified. Any person emotionally affected by any aspects of the research could make use of a single counselling session, free of charge and arranged by the researcher.

### **Justice**

Research participants were treated with fairness and equity during all stages. No discrimination based on race, gender, or background took place. Caution was taken to avoid falsification, fraud, and plagiarism. The researcher will, in all cases, be the first author and only her supervisor will be the second author.

### **Collaborative partnership**

This research was conducted in collaboration with the target community. Results that are relevant, appropriate, and that empower the community will be announced to the host community (the schools involved) in the published articles. Individual results of the assessments will be available on request.

### **Conclusion**

In conclusion, this study aimed to statistically evaluate the relationships between teacher's perceived stress, their sense of self-efficacy, and their adaptive coping strategies. The rationale for this study was given in the preceding discussion of relevant literature on the constructs of stress, self-efficacy, and adaptive coping. The empirical results obtained in this study may contribute to some understanding of the sense of self-efficacy and adaptive coping strategies used by South African teachers in dealing with stressors they may experience in the educational context. Further research may also be inspired by this study.

The next chapter will contain two manuscripts which are the research reports of this study. The third chapter will discuss the conclusions and recommendations that emerged from this study.

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# **CHAPTER TWO**

## **Research Report**

# **MANUSCRIPT ONE**

## **Relationships Between Teachers' Perceived Stress, Coping Self-efficacy and Adaptive Coping Strategies**

## **Abstract**

In this study, the relationships between the perceived stress, a sense of coping self-efficacy, and the adaptive coping strategies of teachers in Gauteng, South Africa, were investigated. The N=283 teachers completed the Perceived Stress Scale or PSS (Cohen & Williamson, 1988), the Coping Self-efficacy Scale or CSES (Chesney et al., 2006), and the Coping Strategy Inventory or COPE (Carver, 1997). Descriptive statistics, reliabilities of factors representing the scales, and correlations between the factors were calculated. With Mplus 8.1 (Muthén & Muthén, 1998-2016) a measurement model was specified and tested for best statistical fit. On the best fitting measurement model, a structural model was based and also tested for statistical fit. Statistical path coefficients indicated the direct and indirect pathways of perceived stress and coping self-efficacy to adaptive coping strategies. Therefore, by means of the bootstrapping method, it was determined that coping self-efficacy, through perceived stress, had an indirect effect on the adaptive coping strategies of teachers. The findings, as well as limitations of the study, were described and discussed. All research aims were met.

**Keywords:** adaptive coping strategies; coping self-efficacy; educator stress; measurement model; mediation effects; perceived stress; structural model.

In this study, the relationships between teachers' perceived stress, their sense of self-efficacy and their coping strategies were investigated.

Stress is a reality in the lives of all human beings and an inevitable part of life. Since stress causes emotional and physical pressures that are undesirable and irritating, people want to take action to reduce their stress (Kerry-Mummery, 2013). Therefore, understanding the relationships between stress, a sense of self-efficacy, and coping strategies as they relate to the teaching context, may provide a framework of knowledge to develop educational intervention strategies and teacher well-being policies in South Africa. Below, the aforementioned constructs will be described.

### **Perceived Stress**

Stress is conceptualized, according to Stangor and Walinga (2014), as a response to a stimulus from, and a transaction with, a stressor. Phillips (2013) described perceived stress as the feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period.

The Transactional model of stress and coping by Lazarus and Cohen (1977) is a classical framework for evaluating the processes of coping with stressful events and views stress as an individual occurrence that is both interactional and situational (Rout & Rout, 2002; Wilson & Hall, 2002). Stressful experiences are construed as person-environment transactions, in which such transactions depend on the impact of the external stressor and on social and cultural resources at the person's disposal, which are mediated by their appraisal of the stressor (Glanz, Rimer, & Lewis, 2002).

### **Occupational stress of teachers**

According to Sutherland and Cooper (2000) stress experienced due to a person's work or employment is termed occupational stress and is seen as one of the major health hazards of the modern workplace. Occupational stress and stressful working conditions have been linked

to outcomes of low productivity, absenteeism and increased rates of accidents on and off the job.

Teaching as an occupation, according to Greenglass and Burke (2003) may bring personal satisfaction, but it also brings stress due to demands from administrators, colleagues, students and parents, combined with work overload, student misbehaviour, and a lack of recognition for teaching accomplishments. The teaching profession is considered a helping profession with a high risk of burnout due to continuous emotional demands (Schaufeli, Leiter, & Maslach, 2008), as well as multiple stress factors such as physical and emotional fatigue, feelings of detachment and ineffectiveness, and mental exhaustion (Conrad & Kellar-Guenther, 2006; Melamed, Shirom, Toker, Berliner, & Shapira, 2006). According to Kyriacou (2001) teaching has been listed among other high-stress professions, with as many as one-quarter of teachers reporting teaching as a very stressful occupation. Teachers with high levels of *educator stress*, described as the experience of negative emotions resulting from a teacher's work (Kyriacou, 2001), also reported to have lower self-efficacy (Betoret, 2006; Skaalvik & Skaalvik, 2007), poorer teacher-pupil rapport, and lower levels of general effectiveness (Kokkinos, 2007).

Studies of educational stress have found that the principal risk factors of stress for teachers are related to contextual variables (Cano-García, Padilla-Muñoz, & Carrasco-Ortiz, 2005) including relational stressors such as having to cope with students' behaviour and learning difficulties, role-ambiguity, conflict amongst colleagues, and problematic relationships with parents (Pepe & Addimando, 2014). Chan (2003) found that situational stressors such as time pressures, large learner-teacher ratios in the classrooms, and a lack of equipment and teaching facilities, can cause burnout in teachers. Furthermore, there are institutional factors that come to bear on teachers such as continual legislative changes, low remuneration, and lack of support from colleagues and principals, inequity, inadequacy of training programs, poor social recognition, and lack of appreciation (Friedman, 2000).

Studies undertaken in different countries revealed that workplace demands contribute to the experience of stress and South African studies found that local teachers experience exceptionally high levels of stress (Emsley, Emsley, & Seedat, 2009; Jonas, 2001; Kamper & Steyn, 2006). Bantwini (2010) reported that due to curriculum reforms and a wave of policy changes in the South African education system, as well as severe contextual restraints such as large classes, lack of resources, poor school leadership, poor parental support, school violence, as well as social problems such as HIV/AIDS and poverty, teachers are prone to high levels of stress. For example, there are secondary schools in the Western Cape that are at risk of being declared dysfunctional due to their negative climate and/or poor performance (Bearschank, 2010). Even well-intended innovations such as inclusive education, the eradication of corporal punishment, and additional mediums of instruction are often to blame for the mounting levels of stress among educators in South Africa (Ngidi & Sibaya, 2002; Saptoe, 2006).

Despite the undisputed high levels of educators' stress and the negative outcomes thereof, researchers have also found that not all teachers experience the workplace as overly stressful (Friedman & Kass, 2002). Self-efficacy and the self-efficacy of teachers will be discussed next since the self-efficacy construct is often investigated and associated with stress experiences and adaptive coping strategies (Fives, Hamman & Olivarez, 2005).

### **Self-Efficacy**

According to Bandura's (1994) seminal work, self-efficacy is viewed as people's beliefs about their capabilities to produce designated levels of performance that influence events that affect their lives. Self-efficacy beliefs determine how people feel, think and motivate themselves and how they behave. Such beliefs produce diverse effects through three major processes including cognitive, motivational, and emotional selection processes. According to Bandura, human behaviour is motivated by the interaction of two kinds of expectations, namely self-efficacy and outcome expectancy. The former refers to people's evaluations of

their capability to undertake and execute a specific task successfully in a specific context, while the latter refers to evaluations about the consequences of such a performance. Bandura (1986, p.129) emphasized that people's behaviour are, "better predicted from their beliefs than from the actual consequences of their actions." Chemers, Hu and Garcia (2001) found that people who experience high levels of self-efficacy can cope better with stress and that their levels of stress are generally significantly lower compared with people whose levels of self-efficacy are low. Self-efficacy and stress are reported to be related concepts, as can be seen in Lazarus' cognitive model of stress (Lazarus & Folkman, 1984), wherein personal beliefs such as self-efficacy are important in evaluating demands from the environment. Each external demand is evaluated as either a threat or a challenge, and people with high self-efficacy beliefs are more likely to evaluate the demands as a challenge (Chemers, Hu, & Garcia, 2001). In this regard, Crum and Lyddy (2013) stated that when stress is acknowledged, welcomed and utilized, several positive outcomes can occur such as the use of cognitive frameworks called mind-sets (self-efficacy belief systems) to select, organize and interpret stressful information.

### **Self-efficacy of teachers**

Linked to Bandura's social cognitive theory, teachers' self-efficacy beliefs have been repeatedly associated with positive teaching behaviours and student outcomes. Teacher self-efficacy is seen as a teachers' confidence in their ability to promote students' learning experience (Bandura, 2002). According to Friedman and Kass (2002) teachers with a sense of self-efficacy tend to be more organized, display improved skills of instruction, questioning, guidance, providing feedback to students having difficulties, and maintaining students' focus on tasks. Teachers with low self-efficacy display a more defensive rather than collaborative approach to classroom management, feel angered and threatened by misbehaviour, and experience difficulty in maintaining students' focus on tasks. Furthermore, Chwalisz, Altmaier and Russell (1992) found that when teachers with high self-efficacy levels

experience problems related to their profession, they mostly engage in problem-focused thinking and find ways to solve the problem. In contrast, teachers with low levels of self-efficacy tend to avoid such situations and try to solve their emotional disturbances intrapersonally. This approach contributes to teacher burnout and stress.

Self-efficacy researchers agreed that self-efficacy measures should reflect a specific, narrowed down context, rather than a globalised functioning (Bandura, 1997). A global measure of teachers' self-efficacy would ask how confident teachers are in their general teaching ability, while a domain-focused measure would explore teachers' confidence to accomplish their specific tasks. For teachers, sources of self-efficacy are a combination of successful past experiences, verbal support in feedback from principals, students, peers, and parents and opportunities for observation of successful peers (Tschannen-Moran & Woolfolk-Hoy, 2007). These authors have also found that the influence of the sources of self-efficacy may change over time, with verbal persuasion and contextual factors playing a more important role for new teachers than for more experienced teachers. Friedman and Kass (2002) observed that understanding teacher self-efficacy through educational research, can contribute to the understanding of teachers' coping, burnout and stress.

### **Coping self-efficacy (CSE)**

In this research, the self-efficacy of teachers was investigated by means of the coping self-efficacy (CSE) construct.

Bandura (1982) stated that perceptions of self-efficacy influence one's choice of activities and environmental settings and he viewed coping self-efficacy as the belief that one can confidently perform a specific behaviour to achieve the desired outcome in a coping situation (also see Bandura, 1977). High levels of coping self-efficacy positively predict the use of adaptive, active coping styles (e.g., positive cognitive restructuring, emotion-focused or problem-focused coping, proactive coping) and CSE seemingly decreases anxiety and the use of avoidance behaviours (Thompson, Thompson, Jaeggi, Buschkuhl, Jonides, & Gotlib,

2010). Therefore, as the experience of a person's coping self-efficacy increases, potential stressors are seen as less taxing or threatening. According to Chesney, Neilands, Chambers, Taylor, and Folkman (2006), an important aspect of secondary appraisal in the Transactional model of stress and coping (Lazarus & Cohen, 1977), is the evaluation that the person has some control over the outcome of the situation, which can bring about a sense of self-efficacy, that in turn, also influences the coping strategies selected. Seeing as self-efficacy has been described by Bandura (1997) as the confidence beliefs that people have in their ability to perform a course of action, positive secondary appraisal entails the judgment that an outcome is controllable through coping and it reflects the belief in one's ability to perform certain coping behaviours (Chesney et al., 2006; Devonport & Lane, 2006; Lazarus & Folkman, 1984).

Coping self-efficacy involves two important functions: firstly, emotion-focused coping that involves regulating emotional responses to stressful events; and secondly, problem-focused coping, which involves dealing with and/or changing the problem that is causing the stressful event (Chesney et al., 2006). According to Devonport and Lane (2006), CSE refers to changes of people's confidence in their ability to cope, which is an important prerequisite to changing a person's coping behaviour towards being effective in stress management and task outcomes.

Coping and coping strategies have extensively been included in stress management investigations and have often been linked to self-efficacy. Coping strategies will be discussed below.

### **Coping and Coping Strategies**

Weiten and Lloyd (2014) viewed coping as a person's active efforts to master, reduce or tolerate demands created by stress, while according to Lazarus and Folkman (1984, p. 141) coping is the, "constantly changing cognitive and behavioural efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the

person.” Copings strategies are seen as specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimize stressful events (Dardas & Ahmad, 2013). Kerry-Mummery (2013) stated that the stress coping strategies of each person are unique ways of dealing with issues and problems in life. Coping strategies are often divided into three strategies namely, problem-focused coping strategies, emotion-focused coping strategies, and avoidance coping strategies.

According to Lopez (2014), the Transactional Model of Stress and Coping of Lazarus and Folkman (1986) showed that stress can be minimized by helping stressed individuals change their awareness of stressors, by providing them with appropriate coping strategies and by improving their confidence to overcome and to manage a stressful situation. Furthermore, Kao and Craigie (2013) found that unsuccessful coping strategies actually contribute to perceived stress and according to Futa, Nash, Hansen, and Garbin (2003), maladaptive coping responses (e.g., avoidant coping) contribute to poor outcomes while people who use successful coping mechanisms are happier, enjoy better mental health and more gratifying personal relationships. Adaptive coping strategies generally involve confronting problems directly, making reasonably realistic appraisals of problems, recognizing and changing unhealthy emotional reactions, and trying to prevent adverse effects on the body (SparkNotes Editors, 2005). The method in which individuals react to or cope with stressful situations, influences the long-term impact of those stressors, and differences in coping are important contributors to psychological adjustment (Min, Farkas, Minnes, & Singer, 2007).

As far as coping with the demanding educational context is concerned, Richards (2012) found that teachers who cope successfully with the stresses of teaching rely on strong relationships with supportive family and friends; they choose positive attitudes and a sense of humour to deal with stressful situations and make time for solitude and for practising hobbies. Regarding contextual coping mechanisms, researchers agreed that successful teachers cope with their work conditions and with stress by being well-organised in terms of

preparation and planning, as well as by mastering the educational content of their subjects, which stem from and lead to planned problem-solving (Brackenreed, 2011; Yeung, 2012).

According to Engelbrecht, Swart, and Eloff (2001), the coping strategies of South African mainstream teachers who have learners with special needs in their classroom, have either remained largely unidentified or have taken second place to the development and implementation of educational policy. These authors have identified three adaptive coping strategies among South African teachers: i) the use of problem-focused strategies such as making a plan of action and following it; ii) discussing possibilities to solve a problem; and iii) the use of collaborative strategies and discussing the problem with colleagues and/or the child's parents. Emotion-focused strategies such as maintaining a sense of humour, seeking support, and relying on religion, were also reported to be effective coping strategies used by teachers (Engelbrecht, Swart, & Eloff, 2001).

As was stated before, self-efficacy beliefs are related to the selection of coping strategies and to the positive performance of the active coping behaviour. Kerry-Mummery (2013) found that there is a significant relationship between coping strategies and self-efficacy beliefs, indicating that a person can face high levels of pressure, but through self-efficacy beliefs, deals successfully with stressful situations. Azadi, Akbari Balootbangan, Vaezfar, and Rahimi (2014) found a significant relationship between self-efficacy and coping with occupational stressors, in which self-efficacy was a good predictor for adaptively coping with stress.

Above, the constructs of perceived stress, self-efficacy viewed as coping with self-efficacy, and coping strategies were discussed. From the literature review, a research question emerged namely: *What are the statistical relationships between perceived stress, coping self-efficacy and adaptive coping strategies of teachers and can perceived stress mediate the relationship between the coping self-efficacy and adaptive coping strategies of these teachers?*

Aims with which to answer the research question were:

- To determine descriptive statistics from the data;
- To determine reliabilities of and correlations between identified factors representing the scales used;
- To identify measurement and structural models by means of SEM;
- To determine whether perceived stress (PSS) will mediate the coping self-efficacy (CSES) and adaptive coping strategies (COPE) relationships.

The research methodology of this study will be discussed next.

## **Research Methodology**

### **Research design and research method**

A research method gives a specific direction for procedures used in a study (Creswell, 2009).

In this section, the research design, participants involved, research procedures, data collection and data analysis methods, and ethical considerations will be discussed.

The **general aim** of the study was to investigate the relationships and the directions thereof between perceived stress, coping self-efficacy and adaptive coping strategies of a group of teachers employed by the Gauteng Department of Education in South Africa. The **specific aims** were to analyse: i) descriptive statistics; ii) reliability of the scales; iii) correlational indices; iv) measurement and structural models; and v) the mediating value of perceived stress in the coping self-efficacy and coping strategy relationship.

To reach these aims, a quantitative approach to conduct “measurements of the real world characteristics of human experience” (Durrheim, Terre Blanche, & Painter, 2006, p.47) was used. With this approach, statistical findings of the interrelated relationships of measurement constructs could be described. According to Terre Blanche and Durrheim (2002), quantitative research collects data in the form of numbers and uses statistical types of data analyses. Furthermore, these authors stated that the quantitative method begins with a

series of predetermined categories usually embodied in validated measures, using the data to make broad and general comparisons. The research employed a single cross-sectional survey design.

Due to possible research gaps that were identified in the literature, the focus in this study was placed on the sense of self-efficacy and *adaptive* coping strategies of teachers and on whether or not these factors influenced their perceived stress.

### **Participants and research procedure**

A study population of  $n=283$  participants, who were all registered teachers in the Gauteng Department of Education, was used. Written permission was obtained from the research director of the Gauteng Department of Education for this project. A *convenience sample* (Durrheim, 2006) of teachers from 19 schools (eight high schools, seven primary schools and four LSEN/special education schools) in the Gauteng Province of South Africa, were approached for voluntary and consenting participation in the study. Out of a total of 350 teachers, 301 gave consent, completed and returned the questionnaires, giving a satisfying response rate of 86% (Fincham, 2008). Finally, 283 questionnaires were used for valid analysis. A total of 18 questionnaires were considered invalid due to partial and/or incorrect completion of the questionnaires.

The biographical characteristics of participants are shown in Table 1, displaying the distribution of gender, level of qualifications, years of teaching experience, grades taught and type of school.

**Table 1: Characteristics of the Participants (N = 283)**

<b>GROUPS</b>	<b>N</b>	<b>%</b>
<b>Gender distribution:</b>		
Male	43	15.2
Female	239	84.8
<b>Qualifications:</b>		
Grade 12	11	3.9
Diploma	77	27.4
BA/BCom, BSc Degree	25	8.9
PGCE	26	9.3
BEd. Degree	90	32.0
Honour's Degree	43	15.3
Master's Degree	9	3.2
<b>Years of Teaching:</b>		
0-5 years	75	26.9
6-10 years	50	17.9
11-20 years	48	17.2
21-30 years	68	24.4
30 + years	38	13.6
<b>Grades taught:</b>		
Gr. 0-3	80	28.7
Gr.4-7	53	19.0
Gr.7-9	66	23.7
Gr.10-12	63	22.6
Other	3	1.1
<b>Type of school:</b>		
GDE Mainstream	199	70.3
GDELSEN school	81	28.6
Private school	3	1.1

Note: Not all participants provided their complete biographical information

From Table 1 can be seen that the sample population comprised both male ( $n=43$ , 15%) and female participants ( $n=239$ , 85%). The majority of participants or 27.4% ( $n=77$ ) indicated that they hold a teaching diploma, while the rest have either a Grade 12 certificate, a Bachelor's Degree in Education, Commerce, or Sciences or a Postgraduate qualification such as the Postgraduate Certificate in Education (PGCE), an Honour's Degree or a Master's Degree.

As far as years of teaching experience was concerned, 26.9% ( $n=75$ ) of the participants indicated that they taught between 0 and 5 years, 17.9% ( $n=50$ ) between 6 and 10 years, 17.2% ( $n=48$ ) between 11 and 20 years, 24.4% ( $n=68$ ) between 21 and 30 years and the minority, 13.6% ( $n=38$ ) had more than 30 years teaching experience. The teachers were asked to respond to the grades they taught and 47 % ( $n=133$ ) indicated that they were teaching Grade 0-6 (Foundation Phase and Intermediate Phase) as opposed to 46% ( $n=129$ ) who were teaching Grade 7-12 (Senior Phase and FET). Finally, the majority of teachers, 70.3% ( $n=199$ ) were teaching at GDE mainstream schools as opposed to 29% ( $n=81$ ) of teachers who were teaching at GDELSN schools and 1.1% ( $n=3$ ) of teachers who were teaching at private (non-GDE) schools.

### **Data collection**

After the GDE's permission to conduct the research was obtained, headmasters of schools were approached through letters and personal contact, for permission to conduct the study in their schools. The researcher then visited the schools at a convenient time as agreed with the principal to meet the teachers and gave them full information about the research and their rights as participants therein. Teachers willing to participate were identified at these meetings and arrangements were made to obtain their informed consent and provide them with the questionnaire booklet, as well as where these completed booklets could after 10 days be collected by the researcher. Participants were provided with the researcher's contact details

where she was available to assist them in any way possible. The study was conducted during school hours, i.e. between 07:00 am and 14:00 pm.

The data was collected from the participants who voluntarily completed three validated self-report questionnaires. According to Poulou and Norwick (2002), who examined the role of constructs in psychosocial and educational measurement, alternative methods have an equally long history, but self-reported questionnaires remain the most popular choice. Their popularity appears to be based on a number of advantages, which include easy interpretability, the richness of information, motivation to report, and practicality.

Each participant (teachers) received a booklet containing the following three validated self-reported questionnaires and a biographic questionnaire, all in English.

A *Biographic Questionnaire (BQ)* was devised by the researcher to obtain information about the teachers' gender, years of teaching experience, educational background, grades taught, and the type of school where they are teaching.

*The Perceived Stress Scale (PSS)* of Cohen and Williamson (1988) was used to determine the educators' experience of stress associated with teaching. The PSS10 is a widely used psychological instrument for measuring the perception of stress. It is a 10 item measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap into how unpredictable, uncontrollable and overloaded respondents find their lives (Cohen & Williamson, 1988). The questions in the PSS ask about feelings and thoughts during the last month and in each case, respondents are asked how often they felt in a certain way. Each item is rated on a 5-point measuring scale ranging from never (0) to almost always (4). Items 4, 5, 7 and 8 are positively stated items and are thus reverse-scored. The total ratings are summed, with higher scores indicating higher levels of perceived stress and lower scores indicating lower levels of perceived stress. The PSS has a Cronbach's Alpha coefficient as an indicator of the internal reliability of 0.75 (Cohen, Kamarck, & Mermelstein, 1988). Similar findings

were reported by Hamad, Fernald, and Karlan (2009), who found that adults in South Africa demonstrate scores ranging from 0 to 40 and that the test had a Cronbach's Alpha of 0.72.

The rationale for using the Perceived Stress Scale in this study was to determine the teachers' perceptions of perceived stress and although it can be generalized to any situation that the participant may have encountered, teachers were requested to focus on their job-related experiences over a period of about one month.

The *Coping Self-Efficacy Scale, (CSES)* is a 26 item measure developed by Chesney and her colleagues (2006). The CSES focuses on changes in a person's confidence in his/her ability to effectively cope with challenges and threatening situations. According to Chesney, Neilands, Chambers, Taylor, and Folkman (2006), the CSES was developed to measure individuals' evaluation of their CSE, rather than their coping strategies *per se*. Exploratory and confirmatory factor analysis of the CSES revealed three factors that became subscales of the CSES: i) the use of problem-focused coping; ii) to stop unpleasant emotions and thoughts; and iii) the use of social support from friends and family members. The participants were asked to use an 11-point scale and to rate the extent to which they believe they could employ adaptive coping strategies, for example, *sort out what can be changed, and what cannot be changed; break an upsetting problem down into smaller parts; look for something good in a negative situation, and get emotional support from friends and family*. Items on the scales were rated as 0 (*cannot do at all*), 5 (*moderately certain can do*) and 10 (*certain can do*). An overall CSES score was calculated by summing the individual item ratings and high scores indicated good CSE. The Cronbach's Alpha for each scale ranged from 0.80 for using social support from friends and family to 0.91 for problem-focused coping and positive reframing (Chesney et al., 2006). The CSES was used in a validation study of the scale in the South African context and a Cronbach's Alpha reliability coefficient of 0.87 was reported (Van Wyk, Wissing & Temane, 2010).

The CSES was included in this study since it is seen as a scale that measures the application of self-efficacy in coping behaviour. It is thus an applied combination of two constructs in this study and it has been validated for use in South African research, with good psychometric properties. Furthermore, the teachers were requested to focus on their work circumstances when responding to the CSES items.

***The Brief COPE inventory (COPE)*** (Carver, 1997) was used to determine the educators' different coping strategies for dealing with stress. The Brief COPE consists of 14 scales, with two items each that deal with ways people have coped with the stress they are experiencing in their lives. The sub-scales are: self-distraction, items 1 and 19; active coping, items 2 and 7; denial, items 3 and 8; substance use, items 4 and 11; use of emotional support, items 5 and 15; use of instrumental support, items 10 and 23; behavioural disengagement, items 6 and 16; venting, items 9 and 21; positive reinterpretation, items 12 and 17; planning, items 14 and 25; humour, items 18 and 28; acceptance, items 20 and 24; religion, items 22 and 27; and self-blame, items 13 and 26. These items measured the extent to which the participant use a specific coping strategy, as well as how much or how frequently they engage in the specific coping strategy. The item scores ranged from *I haven't been doing this at all* (1), to *I've been doing this a lot* (4) (Carver, 1997). For this study, the focus was mainly on adaptive coping and therefore the strategies of planning, support, positive reinterpretation, humour, acceptance, and religion were used. Although the scales have only two items each, the reliability of each item is higher or above the value of 0.50, regarded as minimally acceptable. This supports the internal reliability of the abbreviated scale (Carver, 1997; Nunnally, 1978). The Brief COPE inventory was used in a South African study, which described the factors that enable police officers to cope more effectively with stress. The Cronbach's Alpha coefficient for reliability in this study was between 0.86 and 0.92 (Louw & Viviers, 2010).

The rationale for using this scale in this research was its psychometric quality and conciseness. The Brief COPE scale can be used to assess teachers' adaptive coping behaviour in the demanding teaching context. Teachers were asked to keep their working environment in mind when responding to the questions.

The Perceived Stress Scale and the Brief COPE inventory are all in the public domain for use in research. For the Coping Self-Efficacy Scale, permission was obtained from the authors.

### **Data analyses**

The researcher electronically captured the raw data using a software programme known as SPSS25 and then cleared or checked for possible errors (Field, 2005). As part of descriptive statistics, the means, standard deviations, and range of scores for the measuring instruments were determined. Pearson correlation coefficients were calculated in which the cut-off level for statistical significance of  $p < 0.05$  was set. The data was further analysed using the Mplus version 8.1 (Muthén & Muthén, 1998-2016). The MLR (Maximum Likelihood-Robust) was used as an estimator. To assess measurement and structural model fit, the comparative fit index (CFI;  $> 0.95$ ), Tucker-Lewis Index (TLI;  $> 0.95$ ), the root mean square error of approximation (RMSEA;  $< 0.08$ ), and the Chi-square difference test, specifically for the categorical estimator, were used. Reliabilities of scales measured by items rated on a continuous scale were computed using a formula based on the sum of squares of standardised loadings and the sum of standardised variance of error terms (Wang, Chen, & Zhang, 2010). Mediation analyses were done by means of the bootstrapping method of Preacher and Hayes (2008).

### **Ethical considerations**

The following ethical criteria were adhered to:

### ***Autonomy and respect for the dignity of the person***

In order to conduct research on participants in an autonomous and respectful manner, participation in this project was **voluntary, consenting and confidential**. An informed consent form was signed by all research participants prior to the research, and after they had been informed about the nature of the research and their rights as participants. All such rights were upheld including their right to withdraw at any stage. Permission to conduct the research was obtained from the Gauteng Department of Education and school principals involved. Ethical approval was also obtained from the OREC Ethics Committee at the NWU: VTC and the ethics clearance number of this committee (NWU-HS-2014-0241) will be used in all publications of the research results.

### ***Non-maleficence***

Caution was taken to ensure that no harm befell the research participants as a direct or indirect consequence of research. Assistance was offered to any person who was emotionally upset as a result of the questions posed. All information obtained for the purpose of the research and shared with third parties or published will be done with aggregate results in which no individual can be identified. Data obtained from questionnaires were treated confidentially and stored securely.

### ***Justice***

Research participants were treated with fairness and equity during all stages. No discrimination based on race, gender, or background took place. Caution was taken to avoid falsification, fraud, and plagiarism. The researcher will, in all cases, be the first author and only her supervisor will be the second author.

### ***Collaborative partnership***

This research was conducted in collaboration with the target community. Results that are relevant, appropriate and that empower the community will be announced to the host

community (the schools involved) in the published articles. Individual results of the assessments will be available on request.

After the preceding discussion of the literature background to and research methodology of this study, the results will be described below.

### **Results of This Study**

As stated before, the aim of this study was to investigate the relationships between perceived stress, coping self-efficacy, and adaptive coping strategies of a group of teachers and to determine whether or not the relationship between coping self-efficacy and coping strategies of teachers would be mediated by their perceived stress. The findings of the research conducted on meeting these aims are as follows:

#### **Descriptive results**

Table 2 below shows the range of scores, means and standard deviations of scores of the PSS, COPE and CSES measures, respectively, used in this study.

**Table 2:** *The range of scores, means and standard deviations of the PSS, COPE and CSES with N=283 participants*

<b>Variable</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>SD</b>
PSS	1	5	3.18	0.79
Cope-Planning	1	4	2.85	0.78
Cope- Support	1	4	2.65	0.85
Cope - Reinterpretation	1	4	2.85	0.81
Cope-Humour	1	4	2.28	0.99
Cope -Acceptance	1	4	3.10	0.77
Cope -Religion	1	4	3.25	0.90
CSES	1	10	6.57	1.39

The mean score reported here for the PSS of teachers is fairly low compared to that in a study by Smith, Rosenberg and Haight (2014) with Business and Accounting students, who found a mean score of 9.48 and a standard deviation of 5.23. The PSS means and standard

deviations shown in Table 2, did, however, correspond with those found by Lee (2012) as well as by Hamad, Fernald, Karlan, & Zinman (2008) in a South African population. For the COPE, Louw and Viviers (2010) found corresponding scores in research of psychosocial stress and coping in the South African police. For the CSS, the scores corresponded with those found by Van Wyk, Wissing, and Temane (2010) for the CSES in a South African validation study.

### **Identified factors for further analysis**

By means of confirmatory factor analyses (CFA), using the Mplus version 8.1 statistical software programme (Muthén & Muthén, 1998-2016), the distinctness of the assessed variables for the Perceived Stress Scale, for the COPE scale and for the Coping Self-efficacy Scale of a group of South African teachers, was determined. This study focused specifically on teachers' use of *adaptive* coping strategies; therefore, the results of the items measuring maladaptive coping strategies were omitted. Further analysis also brought about a reduction of items so that for the PSS 9 out of 10 items, for the COPE 15 out of 27 items and for the Coping Self-Efficacy Scale 15 out of 26 items, loaded significantly on the identified factors, and were used in the various analyses performed. The main reasons for the reduction of items were two-fold: firstly, only items that specifically measured aspects relating to adaptive coping were used, which is in line with the aims of the study; and secondly, the refined nature of the Mplus programme brings about a gradual exclusion of items that do not significantly contribute to the final statistical outcomes, in this case, a measurement model. Thus, the results that are further reported were mostly obtained with analyses using the reduced items for the measuring instruments. The following factors were identified by means of CFA:

- For perceived stress (PSS) one factor was identified with nine items loading on it and describing the teachers' perceived stress experiences in the teaching context.
- For the coping self-efficacy (CSES) of teachers, two factors were identified namely: problem-focused coping self-efficacy, with seven items; and emotion-focused coping

self-efficacy, with eight items loading on it. These factors describe the ways that teachers in this study apparently use their sense of self-efficacy to cope with the stressors in their teaching reality.

- For coping (COPE) with stress by teachers, six factors were identified namely: planning with three items; support with four items; reinterpretation with two items; humour with two items; acceptance with two items, and religious coping with two items. These factors represent the coping strategies reported by the teachers in this study to cope with the educational stress that they experience.

### **Reliability of and correlations between factors**

Table 3 below, in line with the second aim of this study, indicates reliability or internal consistency scores of the factors described above for the PSS, CSES and COPE scales used. The approach of Raykov and Marcoulides (2004) is proposed by Wang and Wang (2012), as being more suitable when using structured equation modelling, which was employed in this study. The calculation is based on utilising the standardised factor loadings ( $\gamma$ ) and standardised variance of errors ( $\beta$ ), while including the correlation of errors (Erasmus, Rothmann, & Van Eeden, 2015). The reliabilities for this study obtained by using the described method are expressed as  $\rho$ -(rho)-values and ranged between 0.46 and 0.93. According to the classic criteria of Nunnally (1978), these reliability values could be interpreted as mostly fair to good and are indicative of reliable scores obtained in this research group.

**Table 3:** Reliability coefficients and correlations of the PSS, COPE, CSES with N=283 participants.

Variable	$\rho$	1	2	3	4	5	6	7
1. Perceived stress	0.87	-						
2. Cope - Planning	0.71	0.27**	-					
3. Cope - Support strategies	0.84	0.23**	0.42†**	-				
4. Cope - Reinterpretation	0.59	0.03	0.82‡**	0.34†**	-			
5. Cope – Humour	0.86	0.10	0.25**	0.03	0.45†**	-		
6. Cope - Acceptance	0.46	0.11	0.64‡**	0.19	0.82‡**	0.37†**	-	
7. Cope - Religion	0.85	0.14*	0.39†**	0.27**	0.49†**	0.16*	0.39†**	-
8. Self-efficacy	0.93	-0.56‡**	0.06	-0.18*	0.25**	0.11	0.06	0.19*

\*  $p < 0.05$  †  $r > 0.30$

\*\*  $p < 0.01$  ‡  $r > 0.50$

Regarding correlational findings, in Table 3 it can be seen that planning, support and religious coping strategies correlated significantly positive with perceived stress, while coping self-efficacy correlated highly significantly negative with perceived stress. Coping self-efficacy correlated significantly positive with the reinterpretation coping strategy and with religious coping, and significantly negative with the support coping strategy. The significant negative correlation of coping self-efficacy with perceived stress has large practical significance (Cohen, 1977). These findings meet the second aim of the study.

### **Structural equation modelling results**

#### ***The measurement model***

According to Kline (1998), in the use of structural equation modelling to investigate a research question, the simplest strategy would involve constructing just a single model corresponding to the hypotheses, test it against empirical data, and use a model and other criteria to judge the underlying hypotheses. However, it is not specifically ideal to analyse a single model, but more appropriate to analyse several competing models and compare the results, especially when there are several competing models that are all theoretically plausible and in cases where the original, presumed model did not fit the data well (also see Mulaik & Quartetti, 1997; Mulaik, Raju, & Harshman, 1997).

In line with the above view, and with the third aim of this study, the relationships between the latent variables of the PSS, CSES and COPE were analysed, using the Mplus 8.1 statistical system (Muthén & Muthén, 1998-2016). The confirmatory factor analysis discussed above was used to specify a pre-measurement model (Model 1) which was tested for statistical fit by comparing it with eight alternative models (Models 2 to 9). The nine models were obtained from 9-factor structures, using all items and without correlations. The pre-measurement model with the best statistical fit was used to specify a measurement model

(Model 1) that was again tested for statistical fit with four competing models. These models were specified as follows:

Model 1 consisted of a first order latent variable with nine PSS items; six first-order latent variables for the COPE representing planning with three items, support with three items, reinterpretation with two items, humour with two items, acceptance with two items and religious coping with two items; two first-order latent variables respectively representing problem-focused coping self-efficacy with seven items and emotion-focused coping self-efficacy with eight items, comprising a second-order latent variable representing the CSES.

Model 2 consisted of a similar structure to Model 1, but with an added second-order latent variable for adaptive coping, consisting of six first-order COPE factors.

Model 3 consisted of a first-order latent variable with nine PSS items, a first order latent variable for adaptive coping with 15 items, two first-order latent variables for emotion-focused and problem-focused coping self-efficacy, with seven and eight items respectively, comprising a second-order latent variable representing the CSES.

Model 4 is similar to model 1 except for the CSES. In Model 1 the two first order factors converge into a second-order latent variable representing the CSES, and in Model 4 there are only two first-order latent variables of problem-focused coping with self-efficacy and emotion-focused coping with self-efficacy respectively.

Model 5 consisted of similar first-order latent variables and items representing the PSS and COPE as in Model 1, but with one first order latent variable with 15 items representing the CSES. Table 4 below shows the fit statistics of these five models.

**Table 4:** *Fit statistics of competing measurement models*

<b>Model</b>	$\chi^2$	<i>df</i>	<b>AIC</b>	<b>BIC</b>	<b>CFI</b>	<b>TLI</b>	<b>RMSEA</b>	<b>SRMR</b>
<b>1</b>	1010.20	667	32472.30	33026.40	0.92	0.91	0.04	0.056
<b>2</b>	1058.55	686	32493.65	32978.49	0.91	0.90	0.04	0.070
<b>3</b>	1620.63	692	33116.31	33579.28	0.77	0.76	0.07	0.080
<b>4</b>	999.17	661	32471.13	33047.11	0.92	0.91	0.04	0.056
<b>5</b>	1076.88	669	32547.37	33094.19	0.90	0.89	0.05	0.058

$\chi^2$  = chi-square; *df* = degrees of freedom; AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

In Table 4 it seems that Model 4 has the best statistical fit of the 5 models. A  $\chi^2$  of 999.17 was obtained, fit indices for CFI and TLI were acceptable (above .90) and the model fit for the RMSEA was acceptable (lower than 0.08). The SRMR for Model 4 was 0.056 and was slightly lower than for the alternative models, which indicates an acceptable fit. The AIC and BIC fit indices were used to compare alternative models and the model with the lowest AIC fit was interpreted as the best fitting one, which was Model 4 in this case. The BIC shows a model's parsimony and Model 2 had the lowest or most parsimonious fit of the other compared models. From the fit statistics displayed in Table 4 for the competing models, Model 4 apparently had the statistically best fit of the data used.

Changes of Chi-square values for competing models could not be calculated in a regular manner due to the use of MLR and the Satorra-Bentler Chi-square difference test was used (Satorra & Bentler, 1994). The changes are given in Table 5.

**Table 5:** *Difference testing for changes in chi-square in competing measurement models*

<b>Model</b>	$\Delta\chi^2$	$\Delta df$	<b><math>\rho</math>-value</b>
Model 1	10.87	6	0.09
Model 2	56.70	25	0.00**
Model 3	535.23	31	0.00**
Model 5	59.25	8	0.00**

\*\*  $\rho < 0.01$

Initially, it seemed as if Model 4 was the best fitting model, but after the difference testing for changes in the Chi-square was done, it showed that Model 1 was indeed the best fitting model and therefore, was used to specify a structural model by means of regression analysis.

#### ***The structural model***

A structural model (Model 5) was specified and tested, based on the best fitting measurement model (Model 1). Model 5 was analysed and the fit results, compared with two competing models (Handcock & Mueller, 2010) are shown in Table 6.

**Table 6:** *Initial framework fit indices and standardized path coefficients.*

		Direct and indirect pathways (Model 5)	Direct pathways (Model 6)	Indirect pathways (Model 7)
<b>Fit indices</b>	$\chi^2$	1010.20	1081.20	
	<i>df</i>	667	668	
	<b>AIC</b>	32482.30	32546.88	<b>Unreliable fit statistics</b>
	<b>BIC</b>	33026.40	33097.34	
	<b>CFI</b>	0.92	0.90	
	<b>TLI</b>	0.91	0.89	
	<b>RMSEA</b>	0.04	0.05	
	<b>SRMR</b>	0.06	0.12	
<b>Measures</b>				
<b>Direct pathways to cope - planning</b>	Perceived stress	0.44**	0.37**	<b>Non-positive definite latent variable covariance matrix -</b>
	Self-efficacy	0.31**	0.25	
<b>Direct pathways to cope - support strategies</b>	Perceived stress	0.19*	0.19*	
	Self-efficacy	-0.07	-0.09	
<b>Direct pathways to cope - reinterpretation</b>	Perceived stress	0.25*	0.19*	
	Self-efficacy	0.39**	0.33**	
<b>Direct pathways to cope - humour</b>	Perceived stress	0.24*	0.20*	
	Self-efficacy	0.25**	0.21*	
<b>Direct pathways to cope - acceptance</b>	Perceived stress	0.21	0.18	
	Self-efficacy	0.18	0.15	
<b>Direct pathways to cope - religion</b>	Perceived stress	0.36**	0.29**	
	Self-efficacy	0.39**	0.32**	
<b>Direct pathways to perceived stress</b>	Self-efficacy	-0.56**	-	

\*  $\rho < 0.05$

\*\*  $\rho < 0.01$

As was explained before, the DIFFTEST option was used to calculate the Chi-square values and these are given in Table 7.

**Table 7:** *Difference testing for changes in chi-square in competing structural models*

<b>Model</b>	$\Delta\chi^2$	$\Delta df$	<b>p-value</b>
<b>Model 2</b>	-156.65	1	0.00**

\*\*  $p < 0.01$

Table 6 above shows that Model 5 had the best statistical fit of the models compared as indicated by the RMSEA fit values, the CFI, TLI and AIC indices, as well as by the Chi-square and difference testing values displayed in Table 7.

Table 6 shows that the three models were specified according to their direct and indirect effects on the latent variables of the PSS, CSES and the COPE. From Table 6, it is evident that perceived stress has significant positive direct pathways to the coping strategies of planning, support, reinterpretation, humour, acceptance, and religious coping, which may mean that under stress, the teachers in this study would revert to these coping strategies in attempting to deal with the stressful situations.

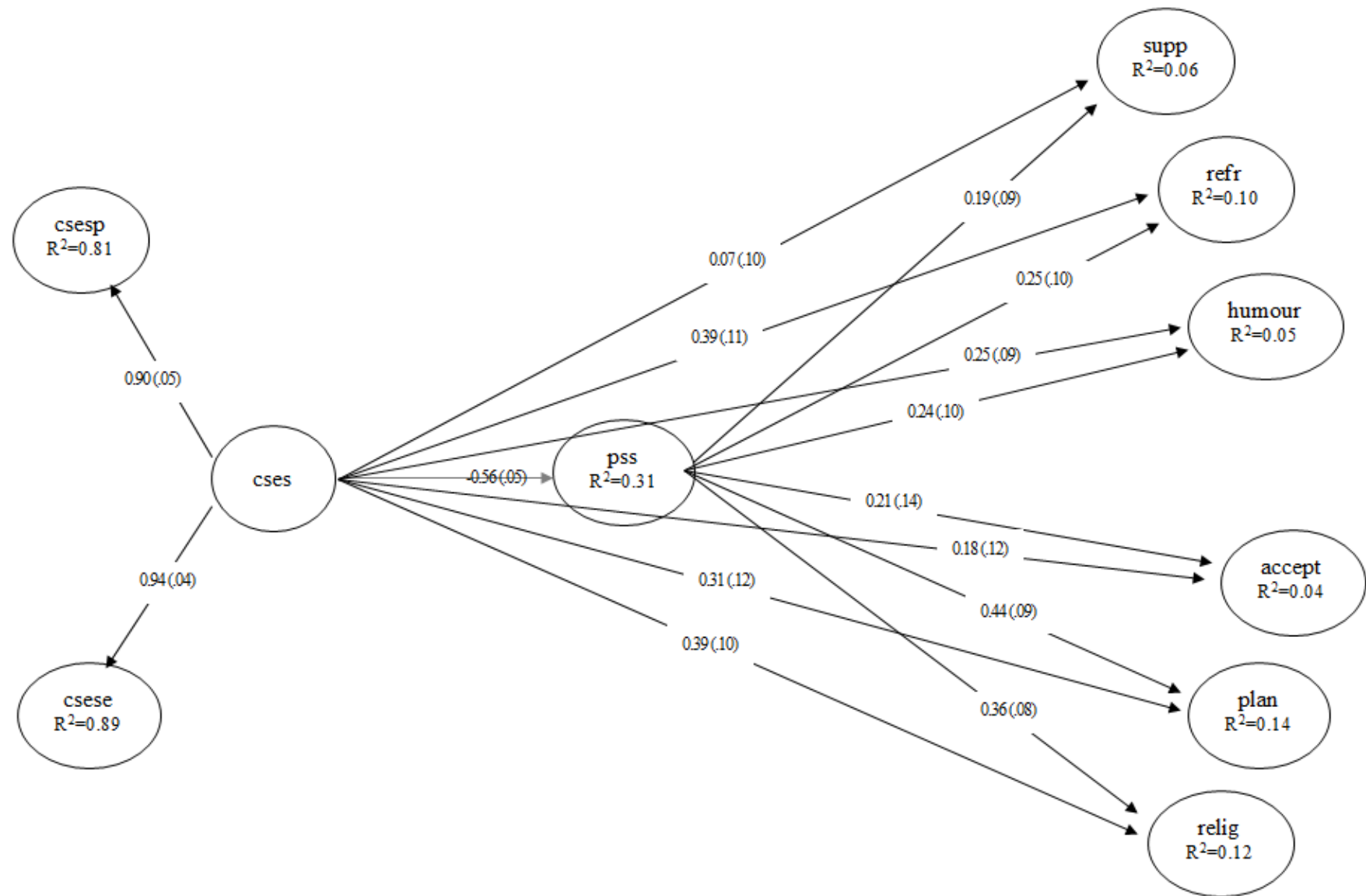
Equally, a sense of coping self-efficacy has direct positive pathways to the same coping strategies as above (planning, reinterpretation, humour, acceptance, and religious coping), which seem to indicate that having a strong sense of coping self-efficacy would enable and steer these teachers to make use of these coping strategies to cope with their stressful experiences.

Coping self-efficacy has, however, a strong negative direct pathway to support, which may indicate that having a strong sense of coping self-efficacy may lessen the need for these teachers to make use of support systems to cope with their stressful experiences. In contrast, a low sense of coping self-efficacy may increase the need for the teachers of this study to make use of support to cope with stress.

Coping self-efficacy also has a strong negative direct pathway to perceived stress, which seems to show that the higher a teacher's sense of coping self-efficacy, the more they

would be able to master stress and the less they would experience a potentially stressful experience as negative or taxing.

Figure 1 below depicts the standard path coefficients calculated by Mplus for Model 5.



**Figure 1:** Standardised path coefficients calculated for Model 5

Figure 1 above, shows the standardised path coefficients found with the CSES as the independent variable and the PSS and COPE as dependent variables.

Coping self-efficacy (CSES) explains 31% of the variance in PSS ( $R^2=0.31$ ;  $\beta=-0.56$ ,  $\rho=0.00$ ), and 6% of the variance in Support (COPE) ( $R^2=0.06$ ;  $\beta=-0.07$ ,  $\rho=0.00$ ). Furthermore, CSES explains 10% of the variance in Reinterpretation ( $R^2=0.10$ ;  $\beta=0.39$ ,  $\rho=0.00$ ), 5% of the variance in Humour ( $R^2=0.05$ ;  $\beta=0.25$ ,  $\rho=0.00$ ), 4% of the variance in Acceptance ( $R^2=0.04$ ;  $\beta=0.21$ ,  $\rho=0.00$ ), 14% of the variance in Planning ( $R^2=0.14$ ;  $\beta=0.44$ ,  $\rho=0.00$ ) and 12% of the variance in Religious coping ( $R^2=0.12$ ;  $\beta=0.36$ ,  $\rho=0.00$ ). The contribution of coping self-efficacy is more with regards to emotion-focused coping self-efficacy (CSESE), which explains 89% of the variance in CSES ( $R^2=0.89$ ,  $\rho=0.00$ ) as opposed to problem-focused coping self-efficacy (CSESP), which explains 81% of the variance in CSES. ( $R^2=0.81$ ,  $\rho=0.00$ ).

The fourth aim of this study was to determine whether perceived stress would influence (mediate) the relationship between coping self-efficacy and coping strategies of teachers. Mediation refers to the transmission of the effect of an independent variable on a dependent variable through one or more other variables (MacKinnon, 2008) for example, coping self-efficacy on adaptive coping strategies through the perceived stress of teachers. The bootstrapping method was used to construct two-sided, bias-correlated confidence intervals in order to evaluate the mediation effects and the statistical significance thereof (Preacher & Hayes, 2008). The indirect effects are given in Table 8.

**Table 8:** *Indirect effects of Coping Self-efficacy (CSES)*

Variable	Perceived stress		
	Est.	SE	95% CI
<b>Cope - Planning</b>	-0.25**	0.06	[-0.39, -0.14]
<b>Cope - Support strategies</b>	-0.11*	0.05	[-0.21, -0.01]
<b>Cope - Reinterpretation</b>	-0.14*	0.06	[-0.28, -0.03]
<b>Cope - Humour</b>	-0.13*	0.06	[-0.27, -0.03]
<b>Cope - Acceptance</b>	-0.12	0.08	[-0.28, 0.03]
<b>Cope - Religion</b>	-0.20**	0.05	[-0.33, -0.11]

\*  $\rho < 0.05$       \*\*  $\rho < 0.01$

*Note:* Est = Estimate; SE = Standard error; 95% CI = 95% Bias-correlated confidence interval.

Table 8 shows that 95% bootstrap confidence levels (5000 trials) for most indirect effects do not include zero (Preacher & Hayes, 2008). Therefore, it is concluded that coping self-efficacy had an indirect effect through perceived stress on the coping strategies of teachers.

### **Discussion of Research Findings**

The broad purpose of this study was to investigate the relationships between the perceived stress, coping self-efficacy, and adaptive coping strategies of a group of N=283 teachers of 19 schools employed by the Gauteng Department of Education. Below the results regarding descriptive statistics, the reliability of scale factors, correlations between scale factors, and structural analyses will be discussed.

### **Descriptive findings**

These findings meet the first specific aim of this research. The means and standard deviations found were compared and prove to be similar to those reported in the literature for the same measuring instruments. According to the mean results of teachers' use of adaptive coping strategies, the most frequently used strategy appears to be Religion ( $\rho= 3.3$ ) and secondly, Acceptance ( $\rho=3.1$ ). The least mentioned coping strategy used by teachers was Humour

( $\rho=2.3$ ). It is particularly interesting that the teachers in this study mostly used emotion-focused coping strategies, which aim to reduce and manage the intensity of the negative and distressing emotions that a stressful situation has caused, rather than solving the problematic situation itself (Lazarus & Folkman, 1987). One wonders whether their primary use of emotion-focused coping could be due to the fact that they can do very little to change the educational context in which they have to operate. By managing their emotional stress, they may attempt to enable themselves to remain operating as optimally as possible (Wrosh, 2011). Kyriacou (2001) however, found that teachers often use a variety of both emotion-focused coping strategies and problem-focused coping strategies to cope with stress, including positive reinterpretation, problem-solving, devoting more time to particular tasks, discussing problems and expressing feelings to others, seeking social support, planning ahead, and prioritizing. Previous studies have shown that low self-efficacy expectations are often associated with a higher use of emotion-focused coping strategies such as acceptance, seeking emotional support and self-criticism (O'Leary, 1992; Terry, 1994).

### **Reliability findings**

In line with the second specific aim of the research, three scales, namely the PSS, the CSES and the Brief COPE, were used to gather data from participants and acceptable  $\rho$ -values, representing reliability indices for the identified factors, were found ( $\rho = 0.46 - 0.93$ ).

The PSS factor obtained a reliability score of  $\rho=0.87$ , which is comparable to the South African study of Hamad, Fernald, Karlan, and Zinman (2008) in a heterogeneous South African population, for which a good internal consistency (Cronbach's  $\alpha = 0.72$  to  $0.89$ ) was found. In addition, a Cronbach's Alpha coefficient of  $0.72$  was obtained to evaluate the reliability of the Perceived Stress Scale (PSS) in a study of Khalili, Sirati, Ebadi, Tavallai and Habibi (2017). The CSES reliability index ( $\rho=0.93$ ) compared well with findings of Johnson, Neilands, Dilworth, Morin, Remien and Chesney (2007), indicating that the Coping Self-

Efficacy Scale (CSES) is valid and reliable with good internal consistency ( $\alpha = 0.80 - 0.91$ ). The COPE subscales had  $\rho$ -values ranging from 0.46 to 0.86, of which the internal consistency for the Planning, Support, Reinterpretation, Humour and Religious subscales compared well with research of Mostert and Joubert (2005) and Pienaar and Rothmann (2003).

The subscale for Acceptance that had the highest mean score, had an internal consistency of only  $\rho = 0.46$ , which is theoretically unexpected and difficult to explain, but could perhaps be due to the item wording and the interpretation thereof by the participants.

### **Correlational findings**

The aim to investigate the relationships among perceived stress, coping self-efficacy and adaptive coping strategies of teachers, was met in the correlational findings of this study.

The significant positive correlations displayed before in Table 3 of adaptive coping strategies like Planning, Support and Religion, with the perceived stress of teachers, may indicate that in the context of these teachers, the more they experience perceived stress, the higher their planning behaviour and their need for social support would be while their use of religion is less prominent (see Ryan, 2013). This, however, is in contrast with studies like that of Lavoie (2013) who reported mostly negative relationships of problem-focused coping strategies with perceived stress. More theoretically expected, is the strong significantly negative correlation of coping self-efficacy with perceived stress. This may mean that the stronger the coping self-efficacy of teachers is, the less they would perceive challenges and demands made on them as stressful and are, rather, motivated to master these matters. Research in this regard abounds, such as that of Bandura (1997, 2000) and Scott-Sheldon, Kalichman, Carey and Fielder (2008). The latter finding also seems to be linked to the significant positive correlations of coping self-efficacy with reframing coping and coping through religion. In their self-efficacy guided efforts to master difficulties, these participating

teachers seemingly cognitively reframe the nature of the stressor and even rely on religion (possibly prayer), which may also lead to thinking differently about the demands (Pargament, Feuille, & Burdzy, 2011).

The significant negative correlations between coping self-efficacy and social support coping is surprising, but could be speculated on from the contextual characteristics of this group of teachers (see McCarthy & Lambert, 2006; McCarthy, Lambert, O'Donnel, & Melendres, 2009). This finding may mean that having a strong sense of self-efficacy in their ability to cope with demands, could diminish their need for social support, although the contrary could be equally true. This finding may support the view of Cohen and Wills (1985), that social support is relevant only for persons under direct stress. According to Barry and Wentzel (2006) there is some disagreement as to whether or not people need social support all the time or just during times of stress and stated that the valuable effects of social support are more visible during stressful times. Therefore, if self-efficacy coping relieves the stressfulness of demands, the need for support would decline. However, in many studies, the positive relationships between self-efficacy and social support are emphasized (e.g., Gayathri & Karthikeyan, 2016; Nekouei, Yousefy, Doost, Manshaee, & Sadeghei, 2014).

### **Findings with measurement and structural models**

In line with the aim of investigating the directions of the relationships between the latent variables of this study, a measurement model was identified from factor analyses of the data obtained by means of the measuring instruments and was compared with competing models to determine the statistical fit. The identified measurement model proved to have the best statistical fit of the data. The best fitting measurement model was used to identify a structural model, which was also tested for the best statistical fit. With the best fitting structural model, pathways between the latent variables were determined. The path coefficients of the structural model indicated that coping self-efficacy (CSES), with both emotion-focused CSE

(CSESE) and problem-solving CSE (CSESP), as well as Perceived Stress (PSS), have mostly direct influences on teachers' adaptive coping strategies.

As depicted in Figure 1 and Table 6 before, self-efficacy coping by means of its problem-solving and emotion-focused components, had mostly direct significant statistical pathways to Planning, Reinterpretation, Humour and Religion as coping strategies, of which the most significant was to Reinterpretation and Religious coping. In corresponding research, Kazemi and Kohandel (2015) reported that the components of self-efficacy are good predictors of problem-focused coping strategies and Shen (2009), as well as Hsien, Sullivan, Sass and Guerra (2012) reported that teachers with self-efficacy use active coping strategies and employ direct problem-solving strategies as stress-reducing techniques. Parto and Besharat (2011) also found direct and indirect effects of self-efficacy on active, adaptive coping strategies.

Perceived stress had significant mostly direct statistical pathways to Planning, Support, Reinterpretation, Humour and Religion as coping strategies, of which the most significant was to Planning, Reinterpretation and Religion. A corresponding study of Chau, Chau, Yeh and Lee (2011) found that high levels of stress predicted the use of behavioural strategies towards active and problem-focused coping strategies, as well as positive emotion-focused coping, while Ryan (2013) found that perceived stress directly evokes emotion-focused coping strategies.

Self-efficacy had a highly significant negative direct pathway to perceived stress, which theoretically ties in with most self-efficacy frameworks and relating research (Bandura, 2009; Chesney et al., 2006). Bandura (1997) postulated that self-efficacy beliefs regulate emotional responses to stress to counteract the appraisal of an event as threatening and uncontrollable, while Jerusalem and Hessling (2009) found that self-efficacy beliefs change the perception of stressors to protect general health and wellness. It is equally important, however, to note that

low levels of a sense of self-efficacy would likely increase the perceived stress in a person and Vaezi and Fallah (2011) found evidence in support of such an assumption in their study with Iranian teachers.

In line with the final specific aim of this study, by means of the bootstrap method of determining the mediation effects of Preacher and Hayes (2008), it was found that perceived stress mediated the relationship between coping self-efficacy and adaptive coping strategies. This finding seems to show that although the self-efficacy of teachers in this study had direct negative effects on their perceived stress, through the mediating effect of stress, self-efficacy had indirect effects on adaptive coping strategies. Therefore, the presence of perceived stress may determine the effect of the teachers' self-efficacy on their use of adaptive coping strategies.

In this regard, Parks, Chang, and Vosvick (2011) found that perceived stress mediates the relationship between self-efficacy and depression. Individuals who adaptively cope with stress positively reinforce their perception of self-efficacy and therefore, they experience less depression. In a study by Lent, Brown, and Hackett (2000), measuring contextual support and barriers to career choices, PSS was found to have a mediating effect on the relationship between CSES and Support coping. CSES had a direct negative effect on PSS and an indirect negative effect through PSS on Support coping, similar to findings of this study. Furthermore, additional studies on PSS as a mediating variable found similar results indicating that PSS served as a significant mediator between empowerment and mental health when measuring the subjective well-being of college students (Shin, 2017) and between loneliness and facets of emotional distress in undergraduate students (Martin, 2014). Finally, the PSS-scale had a mediating effect of either eustress or distress on the relationship between mind-set and health outcomes of college students (Marten, 2017).

In the above exposition, the results found in this quantitative investigation of teachers' perceived stress, coping self-efficacy and adaptive coping strategies were discussed. Although the study could be seen as successful since all the aims have been met, it also had some limitations, which will be briefly discussed below.

### **Limitations of study and suggestions for further research**

According to Wood, Rijdsdijk, Asherson, and Kuntsi (2011), using cross-sectional, correlational design means causality cannot be inferred. Therefore, generalizability is limited due to a single sample in one geographical location. Only teachers under the jurisdiction of the Gauteng Department of Education were recruited for this study, which excluded teachers from rural communities and schools located in the informal settlements of South Africa. Urban teachers, therefore, may have reported different levels of coping self-efficacy and adaptive coping strategies in dealing with their perceived stress experienced in urban classrooms, than teachers from rural communities possibly would have. Research including South African teachers from both urban and rural contexts, is recommended.

In general, research participants who are participating in self-reported research want to respond in a way that makes them look as good as possible by answering questions in what they see as the most desirable way possible to both themselves and the researcher (Ryan, 2013). This study relied solely on self-reported measures to obtain the data, which means it is possible that the results could be affected by self-report bias. Ryan's (2013) suggestion that researchers could include a lie scale in their research, which would enable them to detect intentional desirability, is supported.

The sample included over 85% female teachers, which made gender-based results impossible. According to research conducted by the Centre for Development and Enterprise, 67% of South African teachers are female (IOL News, 2011) and the World Bank data of 2011 reported that the majority of the 137 countries included in their dataset have a majority-

female, primary-school teaching force (Nov 19, 2015, The Atlantic Daily). Although the teaching profession is comprised of a large percentage of females in general, future studies on teacher stress, self-efficacy and coping may actively recruit male teachers to make gender-based analysis possible and increase the generalizability of the results.

Furthermore, the biographical questionnaire did not require participants to indicate their race and/or cultural group. Differences in the way teachers reported perceived stress, the use of CSE and adaptive coping strategies, could be due to cultural differences and/or perceptions and experiences within a racial and/or cultural context. Equally, the biographical variables obtained from participants were not used in any analysis performed and could have given further and deeper insight into the contextual influences on the stress, coping self-efficacy and adaptive coping of this group of teachers. Further research into the role of cultural and contextual variables in perceived stress, coping self-efficacy and coping strategies of teachers is recommended, keeping in mind the caution of Hobfoll (2001) that stress and coping never occurs in a vacuum, but that the social context influences appraisals of the situations, as well as a person's choice of coping strategies.

## **Conclusion**

In conclusion, this research set out to investigate the statistical relationships between the operationalised constructs of perceived stress, coping self-efficacy and adaptive coping strategies in a group of teachers, and also whether or not perceived stress would mediate the relationship between coping self-efficacy and adaptive coping strategies. This research question was fully answered by means of the statistical analyses performed and the results obtained. The main findings of the study were that: i) the means and standard deviations of measures used were in line with those found in other research into comparable groups with the same scales; ii) the reliability of factors representing the measurements were mostly acceptable; iii) statistically significant correlations were found between perceived stress,

coping self-efficacy and adaptive coping strategies that mostly made theoretical sense, although contrasting findings in literature were also considered; iv) measurement and structural models with best statistical fit were identified from the data obtained, by means of which significant statistical pathways, as well as mostly direct effects between latent variables, were identified, that explained the nature and direction of the relationships between perceived stress, coping self-efficacy and adaptive coping strategies of the participating teachers; and v) perceived stress had a mediating influence in the relationship between teachers' coping self-efficacy and their adaptive coping strategies. This study could, therefore, be seen as complete and successful.

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# **MANUSCRIPT 2**

## **Latent Profile Analysis of Teachers' Perceived Stress and Coping in an Educational Context**

## **Abstract**

In this study, the latent profiles of teachers based on their perceived stress and adaptive coping strategies were analysed and their coping self-efficacy was used to predict profile membership. The N=283 teachers from Gauteng, South Africa, completed the PSS of Cohen and Williamson (1988), the Brief COPE of Carver (1997), and the CSES of Chesney et al. (2006). By means of Mplus 8.1 (Muthén & Muthén, 1998-2016) latent profile analysis was done and three profiles were specified, namely moderately coping teachers (48.6%), non-coping teachers (12%), and coping well teachers (39.4%). Regression coefficients for the latent variables significantly showed that teachers who cope well will likely use problem-solving coping self-efficacy, and those who do not cope will likely use emotional coping self-efficacy. No significant differences were found in the coping self-efficacy of moderately coping teachers compared to coping well teachers. The findings were described and discussed, and limitations of the study were indicated. The aims of the study were met.

**Keywords:** coping self-efficacy, coping strategies, latent profile analysis, perceived stress, stress and coping profiles, teacher stress.

Rather than being a homogeneous group, teachers are individuals with unique combinations of characteristics and experiences within their teaching roles, in the types of stress and stress levels that they experience, as well as in the coping strategies that they apply to deal with the stress posed by their teaching context. This may mean that types of teachers may exist based on their perceived stress and the coping strategies that they employ to handle their stress.

Also, that among teachers a perceived stress and coping strategies typology, or classification into abstract categories called subtypes, could be identified (Jahiel & Babor, 2011; Van der Vaart, De Witte, Van den Brock, & Rothmann, 2017). This study aimed at investigating whether or not there are different types (classes) of teachers based on their stress and the strategies they use in order to cope with such stress in the teaching context. Another aim was to determine whether or not a sense of coping self-efficacy would predict stress and coping class membership of teachers.

### **Educator Stress**

*Stress* is described by Kassin, Fein, and Markus (2014) as an unpleasant state of arousal, in which the individual perceives the demands of a situation as taxing or over stressing their ability to deal with, or change such demands. Stress is experienced on physical and emotional levels and are manifested as stressors or any specific aspect that causes stress, either personally or contextually. Ryff and Singer (2003) stated that stress is a ubiquitous (commonly experienced) facet of human life and it is often during stress or demands that people's strengths are demonstrated. This may explain why some teachers are able to cope with stressors encountered in the educational context without negative outcomes, while others experience varied negative results from the stressors that challenge their coping abilities (Kassin et al., 2014; Taylor, 2011b).

The prevalence of *work-related stress* has been consistently linked to the helping professions such as teaching and is regarded as an international occurrence, which is well

documented in educational research (e.g., Arikewuyo, 2004; Chan, 2002; Dussault, Royer, & Loiselle, 1997; Howard & Johnson, 2004; van Dick & Wagner, 2001; Williams & Gersh, 2004). Teacher stress is described by Kyriacou (2001) as the negative or unpleasant experience by a teacher resulting from some aspects of their work environment.

South African education is fundamentally changing due to political changes, and as a result of these changes, teachers experience stress. According to Paulse (2005) South African teachers are exposed to a variety of stressors within the teaching situation, such as poor working conditions, lack of proper resources, strikes and student protests, role ambiguity, learner behaviour, time pressures, overbearing workload, little participation in decision-making, and inadequate salaries. Kyriacou (1998; 2001) indicated that stressful situations in schools are caused by poor organizational culture, function, structure, management of procedures, insufficient training of teachers, and poor communication. Furthermore, high stress levels are associated with implementing the unrealistic requirements of Inclusive Education, due to the lack of effective in-service or pre-service training of teachers (Engelbrecht, Swart, & Eloff, 2001). Inclusive education has become a dominant issue within the South African education system, contributing to role overload, lack of resources, lack of time, excessive meetings, overcrowded classrooms, lack of support, and unequal distribution of resources (Paulse, 2005).

Kyriacou (2001) stated that stressors experienced by teachers are unique to the specific interaction between the teacher's personality, values, skills, the context of teaching, and the nature of their teaching environment. Many factors, such as their use of coping strategies, personality traits, and environmental characteristics can affect a teacher's perception of the degree to which situations are stressful.

According to Cohen, Kamarck, and Mermelstein (1983) the impact of perceived stressful events on a person's well-being is largely determined by one's subjective appraisal

of their stressfulness, which also determines the coping strategy used to handle the perceived stress.

### **Coping Strategies**

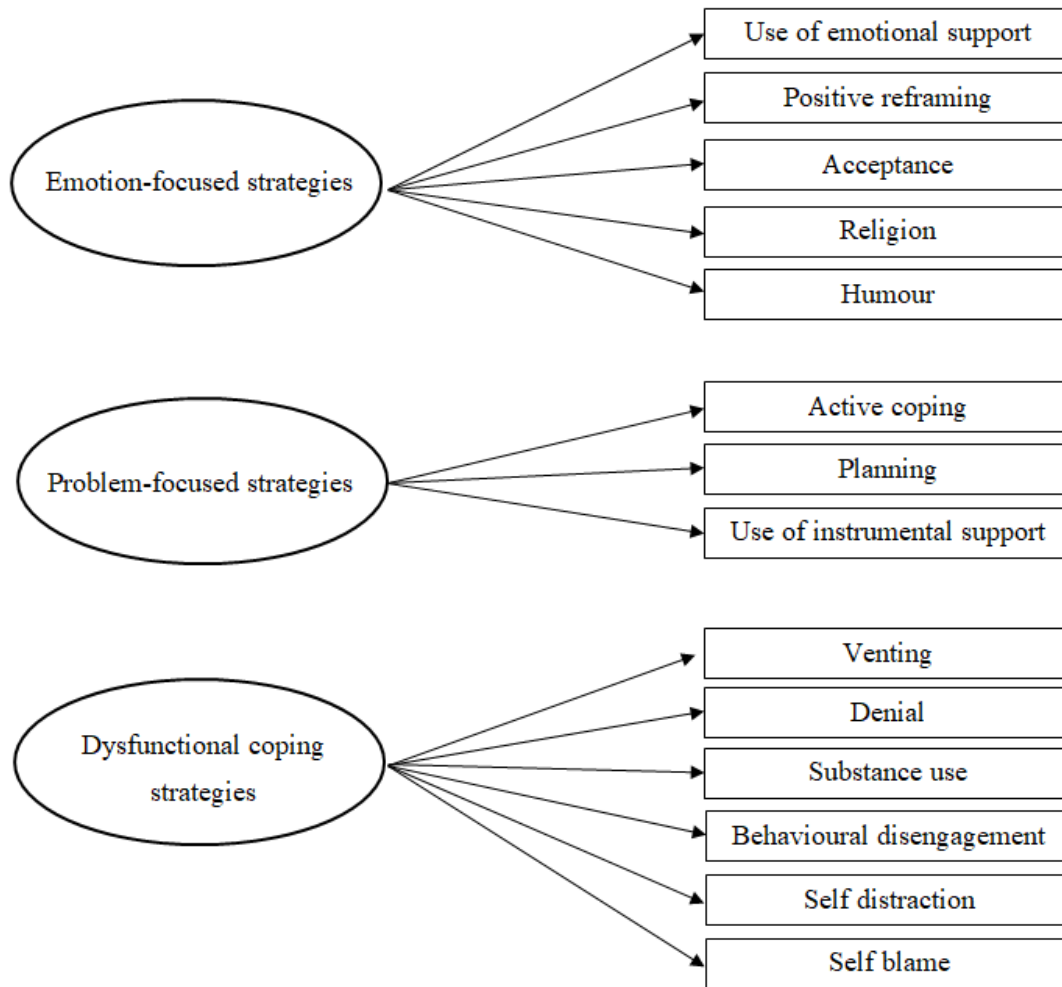
Folkman and Lazarus (1980) described *coping* as cognitive and behavioural attempts to deal with or reduce stressful demands, while Matheny, Aycock, Pugh, Curlette, & Canella (1986, p. 509) described coping as, “any effort, healthy or unhealthy, conscious or unconscious, to prevent, eliminate, or weaken stressors, or to tolerate their effects in the least hurtful manner.” Folkman and Moskowitz (2000) stated that coping behaviours are not specifically related to the nature of stressors, but are influenced by the person’s appraisal of the event and by the internal and external resources available to enable them to deal with stress.

Uchino (2004) viewed *coping strategies* as the cognitive and/or behavioural efforts to adaptively manage psychological stress. Uchino (2004) further explained that coping strategies are frequently regarded as mediators in regulating a person’s level of stress. The purpose of coping strategies is to control and limit the impact of the event that leads to perceived stress in a person and to prevent the loss of energy and personal resources that would be needed to manage the stress and maintain psychosocial well-being (Beck, 1995; Walton, 2002).

Lazarus and Folkman (1984) classically identified two types of coping strategies, referred to as problem-focused coping and emotion-focused coping. Problem-focused coping strategies manage or alter the contributing factors or problems causing the distress and are often used when threatening or challenging situations are appraised as changeable and controllable. Emotion-focused coping aims at regulating the emotional appraisal of a stressful event and is mostly used when the stressful situation is appraised as unchangeable and threatening to one’s emotional well-being (Folkman & Lazarus 1980; Frydenberg & Lewis, 1993).

Holohan and Moos (1987) and Carver, Scheier, and Weintraub (1989) identified two further types of coping strategies, namely active and avoidant strategies. Holohan and Moos (1987) stated that active coping strategies are regarded as adaptive ways to deal with stressful events and involve an awareness of the stressor and attempt to reduce the negative outcome. Avoidant coping strategies appear to be maladaptive in dealing with stress and are characterized by ignoring the issue, often resulting in activities that aid in the denial of the problem (e.g., drinking, sleeping, isolating). According to Matthews, Schwan, Campbell, Scklofske, and Mohamed (2000) the choice of a coping strategy reflects the evaluation of personal competence to deal with the challenge. The essence of effective coping lies in the flexibility of regulating different coping resources and strategies, as demanded by the different stressful situations. Thoits (1995) was of the opinion that the use of adaptive and healthy coping mechanisms is the determining factor to alleviate the harmful effects of a person's perceived stress and to improve their level of well-being. Examples of active coping strategies include problem-solving, positive reinterpretation, seeking information, and social support (Carroll, 2013). Litman and Lunsford (2009), as well as Diong and Bishop (1999) found that approach-oriented strategies (e.g., planning, acceptance) contribute to positive effects on one's health, while avoidant-oriented strategies (e.g., avoidance, denial) contribute to negative health effects.

Coping strategies range from positive thinking to denial (see Figure 1 below) and are measured using a variety of instruments and scales such as the COPE inventory (Carver, Scheier, & Weintraub, 1989) that was also used to measure the coping construct in this study.



**Figure 1:** *The COPE inventory scale of coping techniques (Adapted from Cooper, Katona, Orrell, & Livingston, 2006).*

In Figure 1, a clear distinction in the three-category model by Cooper et al. (2006) between emotion-focused coping strategies, problem-focused coping strategies, and “dysfunctional” or maladaptive coping strategies, are displayed.

As far as the coping of teachers is concerned, Kyriacou (2001) stated that both teachers’ choice and employment of effective coping strategies can result in either a reduction or an increase in their overall stress levels. Regarding the coping process with perceived stress, Shen (2009) reported that teachers’ perceived stress levels determine the choice of coping strategies employed by them. In a study by Engelbrecht, Forlin, Eloff, and Swart (2001) it

was found that the most useful strategy to deal with stress among teachers, was planning an action and following it through. In addition, having a sense of humour, seeking social support and resources from other teachers, and talking about the situation with colleagues or specialist personnel (e.g., the school psychologist) were also regarded as helpful strategies.

### **Self-efficacy and Coping Self-efficacy**

According to Bandura's seminal work (1994), *self-efficacy* is viewed as people's beliefs about their capabilities to produce designated levels of performance that influence events, which affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves, and how they behave. Chemers, Hu, and Garcia (2001) found that people who experience high levels of self-efficacy, can cope better with stress and that their levels of stress are generally, significantly lower compared with people whose levels of self-efficacy were low. Self-efficacy and stress are reported to be related concepts, as can be seen in Lazarus' cognitive model of stress (Lazarus & Folkman, 1984) wherein personal beliefs such as self-efficacy are important in evaluating demands from the environment. Each external demand is evaluated as either a threat or a challenge and people with high self-efficacy beliefs are more likely to evaluate the demands as a challenge (Chemers, Hu, & Garcia, 2001).

*Teachers' self-efficacy* beliefs have been repeatedly associated with positive teaching behaviours and student outcomes. Teacher self-efficacy is seen as a teachers' confidence in their ability to promote students' learning experience (Bandura, 2002). According to Friedman and Kass (2002) teachers with a sense of self-efficacy tend to be more organized, display improved skills of instruction, questioning, guidance, providing feedback to students having difficulties, and maintaining students' focus on tasks. Teachers with low self-efficacy display a more defensive, rather than collaborative approach to classroom management, feel angered and threatened by misbehaviour, and experience difficulty in maintaining students' focus on tasks. Furthermore, Chwalisz, Altmaier, and Russell (1992) found that when

teachers with high self-efficacy levels experience problems related to their profession, they mostly engage in problem-focused thinking and find ways to solve the problem. In contrast, teachers with low levels of self-efficacy tend to avoid such situations and try to solve their emotional disturbances intra-personally. This approach contributes to teacher burnout and stress.

*Coping self-efficacy.* In this research, the self-efficacy of teachers, was investigated by means of the coping self-efficacy (CSE) construct. Bandura (1982) stated that perceptions of self-efficacy influence one's choice of activities and environmental settings and he viewed coping self-efficacy as the belief that one can confidently perform a specific behaviour to achieve the desired outcome in a coping situation (also see Bandura, 1977). High levels of coping self-efficacy positively predict the use of adaptive, active coping styles (e.g., positive cognitive restructuring, emotion-focused or problem-focused coping, proactive coping) and CSE seemingly decreases anxiety and the use of avoidance behaviours (Thompson, Mata, Jaeggi, Buschkuehl, Jonides, & Gotlib, 2010). Therefore, as the experience of a person's coping self-efficacy increases, potential stressors are seen as less taxing or threatening. According to Chesney, Neilands, Chambers, Taylor, and Folkman (2006) an important aspect of secondary appraisal in the transactional model of stress and coping (Lazarus & Cohen, 1977) is the evaluation that the person can control the outcome of the situation, which can bring about a sense of self-efficacy, also influences the coping strategies selected. Seeing that self-efficacy has been described by Bandura (1997) as the confidence beliefs that people have in their ability to perform a course of action, positive secondary appraisal refers to the judgment that an outcome is controllable through coping and it reflects the belief in one's ability to perform certain coping behaviours (Chesney et al., 2006; Devonport & Lane, 2006; Lazarus & Folkman, 1984).

Coping self-efficacy involves two important functions: firstly, emotion-focused coping, which involves regulating emotional responses to stressful events; and secondly, problem-focused coping, which involves dealing with and/or changing the problem that is causing the stressful event (Chesney et al., 2006). According to Devonport and Lane (2006), CSE refers to changes of people's confidence in their ability to cope, which is an important prerequisite to changing a person's coping behaviour towards being effective in stress management and task outcomes.

Above, the constructs of perceived stress, coping strategies, and self-efficacy were briefly discussed. A research question flowing from the literature reviewed was: *Could groups of teachers be identified according to their perceived stress and the adaptive strategies that they employ to cope with stress experienced in the educational context and would coping self-efficacy predict such class membership?*

Aims used to answer the research question were:

- to identify, by means of Latent Profile Analyses (LPA), classes of teachers based on their perceived stress and adaptive coping strategies; and
- to determine whether or not coping self-efficacy would predict class membership identified by LPA.

## **Research Methodology**

### **Research design and research method**

A research method serves the purpose of giving a specific direction for procedures used in a study (Creswell, 2009). In this section, the research design, participants involved, research procedures, data collection, data analysis methods, and ethical considerations, will be discussed.

To reach the aims of the study as stated above, a quantitative approach to conduct “measurements of the real world characteristics of human experience” (Terre Blanche,

Durrheim, & Painter, 2006, p.47) was used. According to Terre Blanche and Durrheim (2002) quantitative research collects data in the form of numbers and uses statistical types of data analyses. Furthermore, these authors stated that the quantitative method begins with a series of predetermined categories, usually embodied in validated measures, using the data to make broad and general comparisons. The research employed a single, cross-sectional survey design.

### **Participants and research procedure**

A study population of  $n=283$  participants, who were all registered teachers in the Gauteng Department of Education, was used. Written permission was obtained from the research director of the Gauteng Department of Education for this project. A *convenience sample* (Terre Blanche, Durrheim, & Painter, 2006) of teachers from 19 schools (eight high schools, seven primary schools and four LSEN/Special Education schools) in the Gauteng Province of South Africa, were approached for voluntary and consenting participation in the study. Out of a total of 350 teachers, 301 gave consent, completed and returned the questionnaires, giving a satisfying response rate of 86% (Fincham, 2008). Finally, 283 questionnaires were used for valid analysis. A total of 18 questionnaires were considered invalid due to partial and/or incorrect completion of the questionnaires.

The biographical characteristics of participants are shown in Table 1, displaying the distribution of gender, level of qualifications, years of teaching experience, grades taught, and type of school.

**Table 1:** *Characteristics of the Participants (N = 283)*

<b>GROUPS</b>	<b>N</b>	<b>%</b>
<b>Gender distribution:</b>		
Male	43	15.2
Female	239	84.8
<b>Qualifications:</b>		
Grade 12	11	3.9
Diploma	77	27.4
BA/BCom, BSc Degree	25	8.9
PGCE	26	9.3
BEd. Degree	90	32.0
Honours Degree	43	15.3
Masters Degree	9	3.2
<b>Years of Teaching:</b>		
0-5 years	75	26.9
6-10 years	50	17.9
11-20 years	48	17.2
21-30 years	68	24.4
30 + years	38	13.6
<b>Grades taught:</b>		
Gr. 0-3	80	28.7
Gr.4-7	53	19.0
Gr.7-9	66	23.7
Gr.10-12	63	22.6
Other	3	1.1
<b>Type of school:</b>		
GDE Mainstream	199	70.3
GDELSEN school	81	28.6
Private school	3	1.1

Note: Not all participants provided their complete biographical information

From Table 1, it can be seen that the sample population comprised both male ( $n=43$ , 15%) and female participants ( $n=239$ , 85%). The majority of participants or 27.4% ( $n=77$ ) indicated that they hold a teaching diploma, while the rest have either a Grade 12 certificate, a Bachelor's Degree in Education, Commerce, or Sciences, or a Postgraduate qualification such as the Postgraduate Certificate in Education (PGCE), an Honour's Degree, or a Master's Degree.

As far as years of teaching experience was concerned, 26.9% ( $n=75$ ) of the participants indicated that they taught between 0 and 5 years; 17.9% ( $n=50$ ) between 6 and 10 years; 17.2% ( $n=48$ ) between 11 and 20 years; 24.4% ( $n=68$ ) between 21 and 30 years; and the minority, 13.6% ( $n=38$ ) had more than 30 years teaching experience. The teachers were asked to respond to the grades they taught and 47% ( $n=133$ ) indicated that they were teaching Grade 0-6 (Foundation Phase and Intermediate Phase) as opposed to 46% ( $n=129$ ) who were teaching Grade 7-12 (Senior Phase and FET). Finally, the majority of teachers, 70.3% ( $n=199$ ) were teaching at GDE mainstream schools as opposed to 29% ( $n=81$ ) of teachers who were teaching at GDE-LSEN schools and 1.1% ( $n=3$ ) of teachers who were teaching at private (non-GDE) schools.

### **Data collection**

After the GDE's permission to conduct the research was obtained, headmasters of schools were approached through letters and personal contact, for permission to conduct the study in their schools. The researcher then visited the schools at a convenient time, as agreed with the principal, to meet the teachers and gave them full information about the research and their rights as participants therein. Teachers willing to participate were identified at these meetings and arrangements were made to obtain their informed consent and provide them with the questionnaire booklet, as well as where these completed booklets could, after 10 days, be collected by the researcher. Participants were provided with the researcher's contact details

where she was available to assist them in any way possible. The study was conducted during school hours, i.e. between 07:00 am and 14:00 pm.

The data was collected from the participants who voluntarily completed three validated self-reported questionnaires. According to Poulou and Norwic (2002) self-reported measurements have a number of advantages, including easy interpretability, the richness of information, motivation to report, and practicality. Each participant (teachers) received a booklet containing the following three validated self-reported questionnaires and a biographic questionnaire, all in English.

A ***Biographic Questionnaire (BQ)*** was devised by the researcher to obtain information about the teachers' gender, years of teaching experience, educational background, grades taught, and the type of school where they are teaching.

***The Perceived Stress Scale (PSS)*** of Cohen and Williamson (1988) was used to determine the educators' experience of stress associated with teaching. The PSS10 is a widely used psychological instrument for measuring the perception of stress. It is a 10 item measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap into how unpredictable, uncontrollable, and overloaded respondents find their lives to be (Cohen & Williamson, 1988). The questions in the PSS ask about feelings and thoughts during the last month and in each case, respondents are asked how often they felt a certain way. Each item is rated on a 5-point measuring scale ranging from never (0) to almost always (4). Items 4, 5, 7 and 8 are positively stated items and are thus reverse-scored. The total ratings are summed, with higher scores indicating higher levels of perceived stress and lower scores indicating lower levels of perceived stress. The PSS has a Chronbach's Alpha coefficient as an indicator of the internal reliability of 0.75 (Cohen, Kamarck, & Mermelstein, 1988). Similar findings were reported by Hamad, Fernald, and Karlan (2009)

who found that adults in South Africa demonstrate scores ranging from 0 to 40 and that the test had a Chronbach's Alpha of 0.72.

The rationale for using the Perceived Stress Scale in this study was to determine the teachers' perceptions of perceived stress and although it can be generalized to any situation that the participant may have encountered, teachers were requested to focus on their job-related experiences over a period of about one month.

***The Brief COPE inventory (COPE)*** (Carver, 1997) was used to determine the educators' different coping strategies for dealing with stress. The Brief COPE consists of 14 scales, with two items each that deal with ways people have used to cope with the stress they are experiencing in their lives. The sub-scales are: Self-distraction, items 1 and 19; active coping, items 2 and 7; denial, items 3 and 8; substance use, items 4 and 11; use of emotional support, items 5 and 15; use of instrumental support, items 10 and 23; behavioural disengagement, items 6 and 16; venting, items 9 and 21; positive reinterpretation, items 12 and 17; planning, items 14 and 25; humour, items 18 and 28; acceptance, items 20 and 24; religion, items 22 and 27; and self-blame, items 13 and 26. The items measured the extent to which the participant uses a specific coping strategy, as well as how much or how frequently they engage in the specific coping strategy. The item scores ranged from *I haven't been doing this at all* (1), to *I've been doing this a lot* (4) (Carver, 1997). For this study, the focus was mainly on adaptive coping and therefore the strategies of planning, support, positive reinterpretation, humour, acceptance, and religion were used. Although the scales have only two items each, the reliability of each item is higher or above the value of 0.50, regarded as minimally acceptable. This supports the internal reliability of the abbreviated scale (Carver, 1997; Nunnally, 1978). The Brief COPE inventory was used in a South African study, which described the factors that enable police officers to cope more effectively with stress. The

Cronbach's Alpha coefficient for reliability in this study was between 0.86 and 0.92 (Louw & Viviers, 2010).

The rationale for using this scale in this research was its psychometric quality and conciseness. The Brief COPE scale can be used to assess teachers' adaptive coping behaviour in the demanding teaching context. Teachers were asked to keep their working environment in mind when responding to the questions.

The *Coping Self-efficacy Scale, (CSES)* is a 26 item measure developed by Chesney and her colleagues (2006). The CSES focuses on changes in a person's confidence in his/her ability to cope effectively with challenges and threatening situations. According to Chesney et al. (2006) the CSES was developed to measure individuals' evaluation of their CSE, rather than their coping strategies *per se*. Exploratory and confirmatory factor analysis of the CSES revealed three factors that became subscales of the CSES: the use of problem-focused coping; to stop unpleasant emotions and thoughts; and the use of social support from friends and family members. The participants were asked to use an 11-point scale to rate the extent to which they believe they could employ adaptive coping strategies, for example, *sort out what can be changed, and what cannot be changed; break an upsetting problem down into smaller parts; look for something good in a negative situation; and get emotional support from friends and family*. Items on the scales were rated as 0 (*cannot do at all*), 5 (*moderately certain can do*) and 10 (*certain can do*). An overall CSES score was calculated by summing the individual item ratings and high scores indicated good CSE. The Chronbach's Alpha for each scale ranged from 0.80 for using social support from friends and family to 0.91 for problem-focused coping and positive reinterpretation (Chesney et al., 2006). The CSES was used in a validation study of the scale in the South African context and a Chronbach's Alpha reliability coefficient of 0.87 was reported (Van Wyk, Wissing, & Temane, 2010).

The CSES was included in this study since it is seen as a scale that measures the application of self-efficacy in coping behaviour. It is thus an applied combination of two constructs in this study and it has been validated for use in South African research, with good psychometric properties. Furthermore, the teachers were requested to focus on their work circumstances when responding to the CSES items.

The Perceived Stress Scale and the Brief COPE inventory are all in the public domain for use in research. Permission to use the CSES was obtained from the authors.

### **Data analyses**

Raw data were captured electronically and checked for correctness (Field, 2005). Descriptive statistics were calculated by means of SPSS25 (IBM Corporation, 2018) and by means of Mplus8 (Muthèn & Muthèn, 1998-2016). A measurement model and a structural model was identified, followed by latent profile analyses (LPA). Lastly, the prediction of class membership, by a sense of coping self-efficacy, was determined.

### **Ethical Considerations**

The following ethical criteria were adhered to:

#### **Autonomy and respect for the dignity of the person**

In order to conduct research on participants in an autonomous and respectful manner, participation in this project was **voluntary, consenting and confidential**. An informed consent form was signed by all research participants prior to the research and after they had been informed about the nature of the research and their rights as participants. All such rights were upheld including their right to withdraw at any stage. Permission to conduct the research was obtained from the Gauteng Department of Education and school principals involved. Ethical approval was also obtained from the OREC Ethics Committee at the NWU: VTC and the ethics clearance number of this committee (NWU-HS-2014-0241) will be used in all publications of the research results.

### **Non-maleficence**

Caution was taken to ensure that no harm came to research participants as a direct or indirect consequence of research. Assistance was offered to any person who was emotionally upset as a result of the questions posed. All information obtained for the purpose of the research and shared with third parties or published will be done with aggregate results in which no individual can be identified. Data obtained from questionnaires were treated confidentially and stored securely.

### **Justice**

Research participants were treated with fairness and equity during all stages. No discrimination based on race, gender, or background took place. Caution was taken to avoid falsification, fraud, and plagiarism. The researcher will in all cases be the first author and only her supervisor will be the second author.

### **Collaborative partnership**

This research was conducted in collaboration with the target community. Results that are relevant, appropriate, and that empower the community will be announced to the host community (the schools involved) in the published articles. Individual results of the assessments were available on request.

After the preceding discussion of the literature background to and research methodology of this study, the results will be described below.

### **Results of the Study**

In this section of this article, the results of the study will be described and thereafter discussed. How the research aims were met, will also be indicated.

### **Descriptive results, the reliability of scales and correlational results**

In Table 2 below, descriptive findings, the reliability of scales as represented by factors identified and correlational findings are depicted.

**Table 2:** Descriptive results, reliability of scales and correlational results

Variable	Mean	SD	$\rho$	1	2	3	4	5	6	7
PSS	3.18	0.79	0.87	-						
Cope-Planning	2.85	0.78	0.71	0.27**	-					
Cope- Support	2.65	0.85	0.84	0.23**	0.42†**	-				
Cope Reinterpretation	2.85	0.81	0.59	0.03	0.82‡**	0.34†**	-			
Cope-Humour	2.28	0.99	0.86	0.10	0.25**	0.03	0.45†**	-		
Cope -Acceptance	3.10	0.77	0.46	0.11	0.64‡**	0.19	0.82‡**	0.37†**	-	
Cope -Religion	3.25	0.90	0.85	0.14*	0.39†**	0.27**	0.49†**	0.16*	0.39†**	-
CSES	6.57	1.39	0.93	-0.56‡**	0.06	-0.18*	0.25**	0.11	0.06	0.19*

\*  $p < 0.05$  †  $r > 0.30$

\*\*  $p < 0.01$  ‡  $r > 0.50$

In a previous study by Rautenbach and van Eeden (2018) descriptive findings, reliabilities, and correlations pertaining to this research were reported in detail, therefore, these aspects will only briefly be described here.

The means and standard deviations found for the PSS, the Brief COPE and the CSES are mostly in line with those reported in the literature for the same scales (Hamad et al., 2009; Louw & Viviers, 2010; Van Wyk et al., 2010). Reliabilities of the factors identified by CFA with data of the PSS, the Brief COPE and the CSES are acceptable, except for the Acceptance sub-scale of the COPE that is too low if considered according to the classic approach of Nunnally (1978). Correlations between factors representing the PSS, Brief COPE and CSES make theoretical sense except for the significant negative correlation of coping self-efficacy with coping through social support, which was unexpected.

With the Mplus 8.1 statistical programme of Muthèn and Muthèn (2012-2018) a pre-measurement model was specified from identified factors and statistically tested for best fit, after which a measurement model was specified and also tested for statistical fit by comparing it with four competing models. Based on the best fitting measurement model, a structural model was specified that, after comparing it with two competing models, showed the best statistical fit.

Next, and in line with the aims of this study, latent profile analysis was performed.

### **Latent Profile Analyses (LPA)**

To meet the aim of this study, the data of N=283 participants who responded to the PSS and Brief COPE questionnaires, was described by means of a frequency analysis, using SPSS25 (IBM Corporation, 2018). Thereafter LPA with Mplus 8.1 (Muthèn & Muthèn, 2012-2018) was conducted to statistically group the participants based on their levels of perceived stress (PSS) and on their adaptive coping strategies (COPE).

A series of models with an increasing number of latent profiles were tested and when a significant improvement from the reference model to a model with more classes occurred, that model was retained. All models were evaluated by means of the Akaike Information Criterion (AIC), Bayes Information Criterion (BIC), and adjusted BIC (ABIC) values (with lowest values indicating the best fit), as well as entropy values (referring to measures of classification uncertainty) ranging from 0 to 1 (values < 0.60 are not acceptable). The number of classes in a mixture analysis is estimated with the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR LRT), the Lo-Mendell-Rubin adjusted LRT (LMR LRT), and the parametric bootstrapped likelihood ratio test (PBLRT) (Wang & Wang, 2012). The quality of class membership was indicated by posterior class membership probabilities and the entropy values.

A number of steps were followed to estimate the LPA model. First, an optimal number of latent profiles were determined; second, the latent profile classification was verified; third, the latent profiles were named; and finally, latent profile membership was predicted. To establish the number of latent profiles, four models with different numbers of latent profiles were estimated and compared, beginning with a single profile model and increasing the number of profiles by one each time. The fit indices found are shown in Table 3 below.

**Table 3:** Comparison of different LPA models ( $n=283$ )

<b>Model</b>	<b>AIC</b>	<b>BIC</b>	<b>ABIC</b>	<b>VLMR LRT p-value</b>	<b>LMRALRT p-value</b>	<b>PBLRT p-value</b>
<b>1-class LPA</b>	3773.93	3824.96	3780.57	n.a.	n.a.	n.a.
<b>2-class LPA</b>	3229.17	3309.37	3239.61	0.00**	0.00**	0.00**
<b>3-class LPA</b>	2957.54	3066.90	2971.77	0.01**	0.01**	0.00**
<b>4-class LPA</b>	2791.66	2930.18	2809.68	0.06	0.07	0.00**

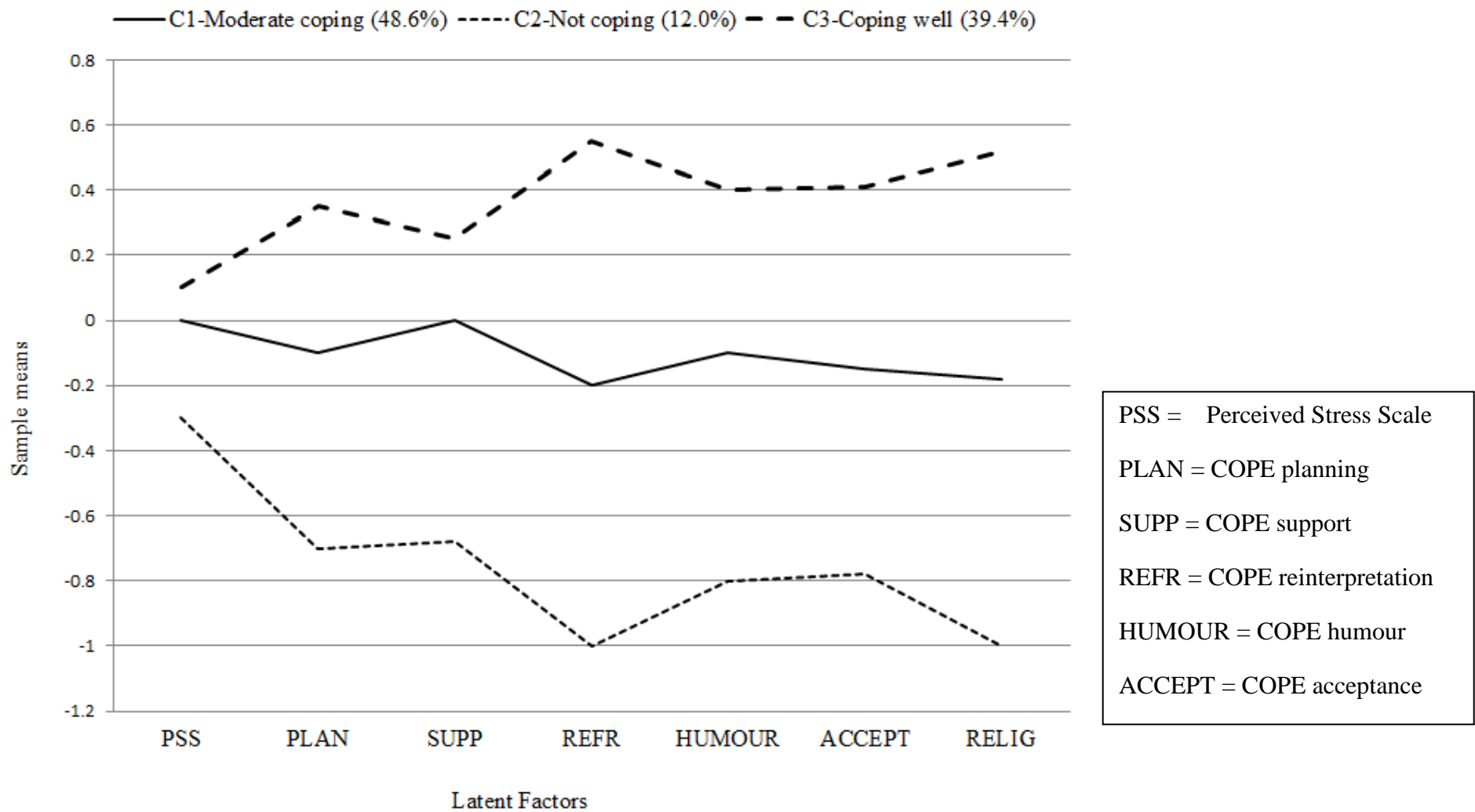
AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Adjusted Bayesian Information Criterion; VLMR LRT = Vuong-Lo-Mendell-Rubin Likelihood Ratio Test; LMR LRT = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test; PBLRT = Parametric Bootstrapped Likelihood Ratio Test

\* $p < 0.05$ \*\* $p < 0.01$

Table 3 shows that a three-class model seemed to have a better statistical fit according to the significant  $p$ -values, even though a four-class model had lower AIC, BIC and ABIC values (the  $p$ -values were not significant). Further steps confirmed the hypothesized model of three classes: step one was to find the best log-likelihood values for the models. The three-class solution replicated the best log-likelihood value (-1592.58) using the default number of starting values. To verify that an even better log-likelihood cannot be found, two runs were done, which increased the number of random starting values to 800 80 and double that to 1600 160, which found the same best-replicated log-likelihood value.

The quality of the latent profile membership was examined next. The entropy values for the two-class and three-class LPA were 0.861 and 0.899 respectively, which point to a better three-class classification (Clark, 2010) since the entropy is closer to 1.00. The posterior class membership probabilities for the three-class LPA model were also all larger than 0.94, which was acceptable according to the cut-off value of 0.70 or greater, as suggested by Nagin and Tremblay (2005).

Next, the latent profiles were named (Figure 2). Class one contained 48.56% of the teachers (N=137) and was called the *moderately coping group*; class two consisted of 12.05% (N=34) and was named the *not coping group*; class three contained 39.39% of the teachers (N=112) and was named the *coping well group*.



**Figure 2:** Latent profiles of teachers

The classes were then predicted through their regression on the CSESE (emotional coping self-efficacy) and the CSESP (problem-solving coping self-efficacy) (Table 4). The fit statistics were: AIC=2952.93, BIC=3076.88 and ABIC=2969.06.

**Table 4:** *Regression coefficients for the different latent profiles*

	<b>Coping ON</b>		<b>Not coping ON</b>	
Self-efficacy - Emotional	-0.16		0.69	
Self-efficacy – Problem-solving	-0.16		-0.87*	
	<b>Coping (1) compared to</b>			
	<u>Not coping (2)</u>		<u>Coping well (3)</u>	
Self-efficacy - Emotional	0.85*	(1 < 2)	0.16	-
Self-efficacy – Problem solving	-0.72*	(2 < 1)	0.16	-
	<b>Not coping (2) compared to</b>			
			<u>Coping well (3)</u>	
Self-efficacy - Emotional			-0.69	-
Self-efficacy – Problem-solving			0.87*	(2 < 3)

\*  $p < 0.05$

From the above, it can be seen that class three of coping well teachers (compared to class two of not coping teachers) are more likely to use problem-solving coping self-efficacy (0.87). Class two of not coping teachers (compared to class one of coping moderately teachers) are more likely to use emotional coping self-efficacy (0.85), but are less likely to use problem-solving coping self-efficacy (-0.72). No significant differences were found on the coping self-efficacy of class one (moderately coping) and class three (coping well) teachers.

### **Discussion of results**

In this study, it was aimed to identify profiles of teachers regarding their perceived stress and adaptive coping strategies used to manage such stress, and to predict profile membership by means of their coping self-efficacy. The results described above indicated that both these aims were met. The most important findings were: firstly, that LPA specified three profiles of teachers named, teachers coping moderately (class 1), teachers not coping (class 2) and teachers coping well (class 3); and secondly, that coping self-efficacy's two components,

namely emotional coping self-efficacy and problem-solving coping self-efficacy predicted that teachers coping well would more likely use problem solving coping self-efficacy and teachers not coping use emotional coping self-efficacy, while no significant differences were found between coping well and coping moderately teachers.

Theoretically, the specification of three groups of teachers based on their adaptive coping strategies is not surprising, since literature abounds with findings that people cope either optimally, functionally, or non-adaptively (Litt, Tennen, Affleck, & Klock, 2011; Schwarzer & Schwarzer, 1996). However, in this study, the perceived stress latent variable was included in the LPA, to indicate how their perceived stress in the educational context would influence the adaptive coping strategies of groups (profiles) of teachers. It is interesting to see that both moderately coping and coping well teachers in this study, experienced somewhat higher levels of stress than teachers who are not coping, which supports the many findings that stress is a motivating factor that sets in motion the dispositional coping abilities of a person (Holohan, Moos, & Schaefer, 1996; Litt et al., 2011).

It was found that 88% of the teachers in this study experienced above average educational work stress, but could cope either functionally or optimally with the stress. This finding is in line with studies reporting on the high levels of stress of South African teachers (Ngidi & Sibaya, 2002; Van Tonder & Williams, 2009) but differs from findings about the difficulty of these teachers to cope with their stress and who either burn out, leave the profession, or have other adverse outcomes (Monyatsi, Steyn, & Kamper, 2006; Vazi, Ruiter, Van den Borne, Martin, Dumont, & Reddy, 2013).

When considering the three profiles that were specified from teachers' perceived stress levels and their adaptive coping strategies, the following was evident:

*Profile one* represented teachers who had average levels of perceived stress and adaptively coped in a mostly moderate or average way with their stress. This group reminds one of the average person in the street and was also the largest group with close to half of the participating teachers (N=283) or 49% (N=137) in it. Social support was the preferred coping strategy of these teachers and thereafter humour, while the more active strategies of planning and cognitive reinterpretation, but also of using religion to cope, were less used by this profile of teachers. There is little variance in their coping strategies and it would seem as if these teachers merely attempted to survive the stressful educational context and coped with the challenges in a matter-of-fact or get-it-over-and-done-with way.

*Profile two* represented teachers who had lower levels of perceived stress than the teachers in the other groups, but much lower means in adaptive coping strategies. Apparently, this small group of teachers (12%) attempted to cope with the educational demands by means of social support and planning, while positive reinterpretation and religion were strategies not frequently used. In the stress and coping theories (see Folkman, 2011) the coping of the teachers in this profile would seem as maladaptive and even bordering on moderate levels of psychopathology. However, since only adaptive coping strategies were used in this study and the COPE sub-scales of denial, behavioural and mental disengagement and substance use not included, further research is recommended in this regard.

*Profile three* represented teachers who had slightly above average levels of perceived stress and above average to high levels of adaptive coping that they use in handling their stress. This was the second largest profile or group of teachers (39%) and their least preferred coping strategy was using social support. This is surprising since social support is highly rated in coping theory as a crucial dynamic in the coping processes, with both supportive and motivational features (Pierce, Sarason, & Sarason, 1996; Taylor, 2011). The most preferred adaptive coping strategy of this group of teachers is a positive reinterpretation of their

perceived stressful experiences and their use of religious coping, which corresponds to the views of Carver, Scheier, and Weintraub (1989) and Pargament (2011) respectively.

A brief comparison of the three teacher profiles showed the following features, amongst other aspects: in all groups, planning was their second most prominent coping strategy, which makes sense with regards to the teaching context. Planning is an inherent part of a teacher's teaching framework and is likely an internalized characteristic of all teachers (Engelbrecht, Forlin, Eloff, & Swart, 2001); social support was strongly used by the moderate- and not-coping teachers, which may indicate their experience of the education context as so threatening and demanding that they needed other's support, in contrast to the teachers coping well, who seemed to believe in their own coping abilities (Taylor & Stanton, 2007). A somewhat surprising difference, and perhaps in contrast to what was just speculated, was the fact that the coping well teachers made more use of religious coping (meaning that they needed support from a higher power) than the moderately coping and not coping groups. In recent coping theories, spiritual and religious coping ways are seen as adaptive coping strategies that relate to coping features such as positive growth, benefit-finding, meaning making, and positive mind-sets (Aspinwall, 2011; Pakenham & Fleming, 2011; Crum & Lyddy, 2014).

A striking difference between the groups was the strong use of positive reinterpretation of their perceived stress by the coping well profile of teachers, while both other groups had it as their least used coping strategy. The reason for this finding is not clear, but may be seen in line with the finding that this profile of teachers would more likely use problem-solving coping self-efficacy than the two other groups. Lastly, it was evident that the moderately coping and not coping groups showed downward or declining trends in their use of adaptive coping strategies (lower means), while the coping well teachers showed an upwards trend. It seemed as if the moderately coping and not coping groups were bordering on maladaptive

coping ways. However, since the COPE's subscales measuring such coping trends, or another measure of symptoms of psychopathology was not included in this study, such a speculation could not be made.

According to Litt, Tennen, and Affleck (2011) coping theorists endorsed either a dispositional-situational view of coping (coping as personality) or as a transitional, dynamic, and bi-directional process between the person and the environment or stress related circumstance, as was initially proposed by Lazarus and Folkman (1984). Litt et al. (2011) further stated that when a stressor is perceived as threatening, dispositional coping is more likely to be used. The COPE is a dispositional-situational approach to coping (Scheier, Carver, & Bridges, 1994). The question comes to mind whether or not the moderate coping and not coping teachers in this study, saw the educational demands as threatening and resorted to dispositional coping, while the coping well profile of teachers appraised their teaching stress as less threatening and rather challenging and therefore engaged in transitional person-stressor coping behaviours. The coping well teachers' strong preference for a positive reinterpretation of their stress experience, may suggest such an approach to their dealing with educational stress. Litt et al. (2011, p. 387) stated in this regard that, "the coping response made by the individual at any given moment in response to stressors can feedback to alter those environmental stressors, as well as one's internal state, and in turn alter appraisals and the choice of subsequent coping responses".

The finding of this study that coping well teachers would likely use coping problem-solving self-efficacy in their approach to deal with educator stress and that not coping teachers would likely use emotional coping self-efficacy approaches, could relate to the above discussion, especially if one considers the findings in research that when a stressor is appraised as threatening emotional coping (Stanton, Kirk, Cameron, & Danoff-Burg, 2000), as well as support-seeking coping (Taylor, 2011) would be used. Self-efficacy beliefs,

however, is associated with adaptive coping, active coping, and problem solving coping (Friedman & Kass, 2002; Thompson et al., 2010) in which the stressor is not appraised as a threat (Chesney et al., 2006) but as a challenge.

### **Limitations of the Study and Recommendations for Further Research**

Although the study reached its aims and could report valid findings, it also had a number of limitations:

- Coping strategies were measured by means of the Brief COPE inventory (Carver, 1997) and only the adaptive coping strategies were included for statistical analysis. The interpretation of some profiles found with LPA were, however, somewhat hampered by the lack of less adaptive coping strategies' findings. In further research, the use of the complete COPE with its fourteen subscales is recommended, especially when using LPA or LCA for statistical analysis.
- With LPA, profiles for moderately coping and not coping teachers were specified that indicated the much lower use of adaptive coping strategies than the profile of teachers coping well with perceived stress. The interpretation of these coping profiles of teachers could further be researched with the inclusion of a non-adaptive coping or even symptoms of pathology measurement.
- Consent for participation in future research was not obtained from the teachers involved in this study. In future research, such informed consent could be obtained and in follow-up study representatives of each teacher profile could be requested to describe their coping behaviour by means of a daily diary writing method, for a specified time. This method, according to Litt et al., (2011) would give information on what is called the individual's coping behaviour signature, which describes the coping ways of the person in interaction with the stressors they encounter.

## **Conclusion**

The research question of this study enquiring about the existence of teacher profiles in this group of teachers based on their perceived stress levels and responding coping strategies was clearly answered by performing LPA on the data obtained from the teachers. Groups or profiles of not coping, moderately coping, and coping well teachers were specified, although their perceived stress levels were fairly similar. This was an interesting finding and future research could further investigate the coping behaviour of teachers in each of the specified profiles. This could give a picture of how various groups of teachers in real time deal with the numerous and taxing demands that they encounter by being South African teachers.

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# CHAPTER 3

## Conclusions, Limitations and Recommendations

**Keywords:** adaptive coping strategies; occupational stress; perceived stress; a sense of coping self-efficacy; teacher stress

This chapter will provide an overview of the conclusions drawn from the study, which reflect the specific research aims pertaining to this study, followed by the limitations of the study, and recommendations for further research. Lastly, ways to practically apply the study in the field of psychology and/or education will be made.

### **Conclusions Drawn from the Study**

The aims of this study were to, by means of a quantitative research design, calculate descriptive statistics, the reliabilities of and correlations between measurements of perceived stress, coping self-efficacy, and adaptive coping strategies; to statistically explain the relationships between the constructs measured, through identified and tested measurement and structural models; to determine whether or not perceived stress (PSS) will mediate the coping self-efficacy (CSES) and adaptive coping strategies (COPE) relationship; to investigate whether or not different types (classes) of teachers could be specified, based on their perceived stress and the strategies that they use to cope with such stress in the teaching context and lastly; and to determine whether or not a sense of coping self-efficacy would predict stress and coping class membership of teachers.

The research question that directed the aims was: *Would a sense of self-efficacy and using adaptive coping strategies have a significant influence on the perceived stress levels of teachers, in other words, what are the relationships between perceived stress, a sense of self-efficacy and the coping strategies of South African teachers?*

### **Conclusions that were drawn from the literature study**

1. Occupational stress is reported as an inevitable part of everyday life (Shukla, 2008) and the phenomenon of teacher stress poses a persistent demand on the professional lives of teachers (Kyriacou, 2001). Teaching nowadays can be emotionally taxing and as a result, influence the well-being of teachers (Kokkinos, 2007; Kyriacou, 2001; Shukla, 2008; Montgomery, & Rupp, 2005). Common contextual sources of teachers' stress in

South Africa were reported in literature, namely poor learner discipline and disruptive student behaviour, the prevalence of school violence, lack of adequate resources, lack of support, heavy workload, lack of time, overcrowded classrooms, and managing the demands of inclusive education while receiving very little training and support from management (Ngidi & Sibaya, 2002; Van Tonder & Williams; Schultz & Steyn, 2007; Cooper, Dewe, & O'Driscoll, 2001; Collins & Parry-Jones, 2000). Studies of educational stress have found that the principal risk factors of stress for teachers are related to contextual variables (Cano-García, Padilla-Muñoz, & Carrasco-Ortiz, 2005) including relational stressors such as having to cope with students' behaviour and learning difficulties, role-ambiguity, conflict amongst colleagues, and problematic relationships with parents (Pepe & Addimando, 2014). It would thus seem as if the perceived stress levels of teachers are unique to their specific situations and that the educational setting provides different challenges compared to other occupational groups.

2. Stress is described as both adaptive or functional and maladaptive or dysfunctional (Crum & Lyddy, 2014; Fay & Sonnentag, 2002) and according to Crum and Lyddy (2014) functional stress can have beneficial effects on one's well-being. Furthermore, individuals can respond to stressful experiences in an optimal way by acknowledging the challenges posed by the threat, welcoming the changes it brings, and utilizing it to benefit one's health. Previous studies, as well as the present study, found that self-efficacy can assist a person in regulating his or her behavioural responses towards stress (Pajares, 2002) and influence how much effort someone will use in coping with his or her stress (King, 2008). High levels of coping self-efficacy are associated with better psychological adjustment and teachers who believe in their ability to cope with their stress, recover more easily from setbacks and are more likely to stay in the teaching

profession for longer (Gibbs, 2000; Pajares, 2002; Schunk & Zimmerman, 2007; Tschannen-Moran, Woolfolk & Hoy, 2005). Teachers with high levels of stress were found to have lower self-efficacy (Betoret, 2006; Kyriacou, 2001; Skaalvik & Skaalvik, 2007), poorer teacher-pupil rapport, and lower levels of general effectiveness (Kokkinos, 2007).

3. Theory-based studies have emphasised the importance of appraising stress with the transactional model of stress and coping, and suggested that the way someone perceives stress, will most likely determine his use of coping strategies (Lazarus & Cohen, 1977; Roth & Cohen, 1986; Stagnor & Walinga, 2014; Weiten & Lloyd, 2004) which is in line with the approach of Crum and Lyddy (2014) that a person's stress mindset would direct their appraisal and coping processes. According to Compton and Hoffman (2013) adaptive coping strategies are more effective in reducing the burden of stress in the short term and that brings relief to long-term stress through the building of resources that could buffer stressful situations (Compton & Hoffman, 2013). Engelbrecht, Swart, and Eloff (2001) have identified three adaptive coping strategies among South African teachers: the use of problem-focused strategies such as making a plan of action and following it; discussing possibilities to solve a problem; and the use of collaborative strategies and discussing the problem with colleagues and/or parents. Furthermore, emotion-focused strategies such as maintaining a sense of humour, seeking support, and relying on religion were also reported to be effective coping strategies used by teachers (Engelbrecht, Swart, & Eloff, 2001). Based on possible research gaps that have been identified in the literature discussed above, attention was given in this study to the sense of self-efficacy and the adaptive coping strategies of teachers and to whether or not these factors had an influence on their perceived stress. The adaptive coping strategies that were used in this study were social support, positive reinterpretation, acceptance,

religion, humour, and planning as measured by the Brief COPE inventory (Carver, 1997).

**The following conclusions were drawn from the empirical findings of this study**

1. The mean scores for the three scales corresponded well with similar findings in research, such as results found by Lee (2012) as well as Hamad, Fernald, Karlan, & Zinman (2008) for the PSS among a South African population. Louw and Viviers (2010) found corresponding scores for the Brief COPE in an evaluation of stress and coping among South African police officers and for the CSES, the scores corresponded with those found by Van Wyk, Wissing, and Temane (2010) for the CSES in a South African validation study.
2. According to the mean results of teachers' use of adaptive coping strategies, the most frequently used was religion, followed by acceptance. The least mentioned coping strategy used by teachers was humour. It is particularly interesting that the teachers in this study used more emotion-focused coping strategies, which according to Lazarus and Folkman (1984), aim to reduce and manage the intensity of the negative and distressing emotions that a stressful situation has caused. By managing their emotional responses to stress, teachers may attempt to enable themselves to remain functioning as optimally as possible. It was speculated that the teachers in this study may be using mostly emotion-focused coping strategies, due to the fact that they can do very little to change the educational context in which they have to operate.
3. As for the correlational results of this study, planning, support, and religious coping strategies correlated significantly positive with perceived stress, which could partly be due to the contextual nature of teachers' stress and their subsequent use of coping strategies, as reflected in a study by Engelbrecht, Swart, and Eloff (2001). These findings may indicate that in the context of these teachers, the more they experience

perceived stress, the higher their need for planning, social support, and to a slightly lesser extent, their use of religion would be (see Ryan, 2013). Furthermore, coping self-efficacy had a highly significant negative correlation with perceived stress. This may mean teachers with a strong sense of coping self-efficacy would perceive challenges and demands as stressful and rather be driven to master these challenges. Research in this regard is reflected in the theoretical findings of Bandura (1997, 2000) and those of Scott-Sheldon, Kalichman, Carey, and Fielder (2008).

Coping self-efficacy correlated significantly positive with reframing or positive reinterpretation and religious coping, and significantly negative with support as a coping strategy. The negative correlations between coping self-efficacy and social support coping (also see McCarthy & Lambert, 2006; McCarthy, Lambert, O'Donnel, & Melendres, 2009) may mean that having a strong sense of self-efficacy in their ability to cope with educational demands, could diminish these teachers' need for social support. This finding may support the view of Cohen and Williamson (1988), who stated that the beneficial effects of social support are most relevant for people experiencing direct stress.

4. As for the results of the pathway analysis, *perceived stress* had significant positive direct pathways to strategies of planning, support, humour, acceptance, reinterpretation and religious coping. This may mean that under stress, the teachers in this study would rely on these coping strategies in an attempt to deal with the stressful situations, as similarly found in corresponding research by Chou, Chau, Yeh, and Lee (2011).

Equally, *coping self-efficacy* also had direct positive pathways to planning, reinterpretation, humour, acceptance, and religious coping, which seem to indicate that having a strong sense of coping self-efficacy would enable and steer these

teachers to make use of these coping strategies to cope with their stressful experiences, which theoretically ties in with most self-efficacy frameworks and relating research (Bandura, 2009; Jerusalem, & Hessling, 2009). Coping self-efficacy has, however, a strong negative direct pathway to support, which may indicate that having a strong sense of coping self-efficacy may lessen the need for these teachers to make use of social support systems to cope with their stressful experiences.

5. Perceived stress mediated the relationship between coping self-efficacy and the adaptive coping strategies of the teachers in this study. This finding showed that the self-efficacy of teachers in this study had direct negative effects on their perceived stress, but had indirect effects through the mediating influence of stress on adaptive coping strategies. Therefore, the mediating effects of perceived stress may determine the effect of the teachers' self-efficacy on their use of adaptive coping strategies. Perceived stress was also found to be a mediating variable in previous studies, for example, Lent, Brown, and Hackett (2000) as well as Parks, Chang, and Vosvick, (2011).
6. As for Latent Profile Analysis, it was specified that three profiles of teachers existed, namely, a moderately coping class (class 1), a not coping class (class 2), and teachers coping well (class 3). The specification of these three groups of teachers based on their perceived stress and their adaptive coping strategies is theoretically expected and literature reports on findings that people cope either optimally, functionally, or non-adaptively (Litt, Tennen, Affleck, & Klock, 2011; Schwarzer & Schwarzer, 1996). It was found that 88% of the teachers in this study experienced high levels of educational work stress, but could cope either moderately or well with their stress. This finding is in line with studies such as Ngidi and Sibaya (2002) as well as Van Tonder and Williams (2009) who reported on the high levels of stress among South

African teachers but contrasted in the sense that most teachers apparently cope better and more adaptively than was reported in these studies. The largest group *profile one* (49%) represented teachers who had average levels of perceived stress and adaptively coped in a mostly moderate or average way with their stress. They used social support as the most preferred coping strategy, followed by humour. Planning, positive reinterpretation, and religious coping strategies were less used by this profile of teachers. *Profile two* (12%) represented teachers who had lower levels of perceived stress than the teachers in the other groups, but also much lower means of adaptive coping strategies, and they seemingly attempted to cope with the educational demands by means of social support and planning. Positive reinterpretation and religion were strategies not frequently used. According to the stress and coping theories of Carver and Scheier (1988) and Folkman, Lazarus, Gruen, and De Longis (1986) the coping of the teachers in this profile may be maladaptive and moderately bordering on levels of psychopathology. *Profile three* (39%) represented teachers who had slightly above average levels of perceived stress and above average to high levels of adaptive coping. Their least preferred coping strategy was using social support, while their most preferred adaptive coping strategy is a positive reinterpretation of their perceived stressful experiences and their use of religious coping. Studies that reported similar findings are those of Carver, Scheier, and Weintraub (1989); Pargament (2011), and Pierce, Sarason, and Sarason (1996).

7. The two components of coping self-efficacy, namely emotion-focused coping self-efficacy and problem-focused coping self-efficacy, predicted that teachers in this study who are coping well would more likely use problem-focused coping self-efficacy, while teachers not coping well would rather use emotional coping self-efficacy. This finding corresponds with findings reported by Stanton, Kirk, Cameron,

and Danoff-Burg (2000), and attests to the theoretical assumptions that a sense of self-efficacy enables a person to have confident beliefs about their ability to act in problem-solving ways. Such beliefs would motivate behaviour toward problem-solving coping (Bandura, 2000). The emotion-focused coping relied on by those who experience difficulties to practically cope with stress is equally accounted for in theory stating that self-efficacy could also be used to bolster oneself in attempts to reside in adverse situations, which is apparently the case with some teachers in this study (Matthews & Wells, 1996; Moskowitz, 2011).

The above-stated conclusions derived from both the literature and empirical components of this study reminded the researcher of the theoretical explanations suggested by Crum, Salovey, and Archer (2013) and Crum and Lyddy (2014) about individual variations in stress appraisal, stress experience, and stress management. The authors suggested that stress perceptions could either be approached with a stress-is-enhancing or a stress-is-debilitating mindset or belief system, which would determine the individual's response to management of and behaviour during stress experiences. The stress-is-enhancing vs. stress-is-debilitating mindset would further influence the effects or outcomes of stress on a person's emotional, cognitive and psychosocial well-being, as well as their health status.

In essence, the Crum, Salovey, and Archer (2013) and Crum and Lyddy (2014) approach corresponds with the classical one of Lazarus and Folkman (1984) that it is the *appraisal of the stressor*, as either threatening vs. manageable, or as debilitating vs. enhancing, that determines the stress-coping-outcome process.

In this study, the coping well profile showed teachers who primarily used positive reinterpretation of the stressful circumstances as their coping strategy of preference, which resonates with the stress-is-enhancing mindset. In contrast, the moderately coping and not coping profiles showed teachers who used mostly emotion-based coping strategies, of which

social support was prominent and that seems to be indicative of a stress-is-debilitating mindset. Crum and Lyddy (2014) stated that both mindsets are actively involved in the individual's attempts to manage stressful experiences, although they do so through different psychological mechanisms. The authors also stated that both mindsets can contribute to distinct capabilities and limitations in the processes of managing stress.

The researcher wonders whether Crum and Lyddy's (2014) proposed a model of mindsets would play a role in the stress-coping approaches of teachers in South Africa, such as those who participated in this study. Further research into stress mindsets of teachers, also with the use of the Stress Mindset Measure by Crum, Salovey, and Archer (2013) is strongly recommended.

### **Limitations**

Limitations of the current study were as follows:

1. The data used in this study were collected via self-reported questionnaires, which could compromise the generalizability of the findings in addition to this study being limited to a sample in one geographical location. Only teachers under the jurisdiction of the Gauteng Department of Education were recruited for this study, which excluded teachers from rural communities and schools located in the informal settlements of South Africa. Urban teachers, therefore, may have reported different levels of self-efficacy and coping strategies in dealing with their perceived stress than teachers from rural communities. Another limitation of self-report measures could be that these results could be affected by self-report bias. Ryan (2013) suggested that researchers could include a lie scale in their research, which would enable them to detect by how much someone is answering according to their desire to come across as positive.

2. In addition, the sample included more female teachers, which made gender-based results impossible. Although not a specific aim of this study, one may want to include male teachers to help increase the generalizability of the results.
3. The participants were not required to report on their race and/or cultural groups. Differences in the way teachers responded to the measurements used, could be due to cultural differences and experiences within a certain racial and/or cultural context. These factors were not considered in this study. Further studies specifically measuring the PSS, CSES and the COPE may want to include culturally diverse groups and factor in the influence of culture or context in the data.
4. Since only the adaptive coping strategies were included for statistical analysis, the interpretation of some profiles found with LPA (profile 2) was, somewhat, hampered by the absence of more maladaptive coping strategies' findings. In further research, when using LPA or LCA, the use of the complete COPE, including the maladaptive coping scales, is recommended.

### **Recommendations from the Study**

The following is recommended for further research.

- Due to the nature of self-reported measures, educational research may benefit from the use of strategies embraced in the business sector for assessing the well-being of workers. In particular, the use of self-reported ratings as well as observations from peers and supervisors to offer a wider perspective, may be helpful in determining the overall well-being of teachers.
- Literature abounds with reported findings of the contextual factors that influence stress experiences and coping with stress, to such an extent that Aldwin (2011, p. 23) stated that, “coping does not occur in a vacuum” but that psychosocial influences are powerful influencers of appraisal and coping. Factors such as maturity, a person’s

frame of reference, personality type, cultural influences, or the participant's particular state of mind at the time of completing the questionnaire could influence the outcome of assessments. According to Folkman and Moskowitz (2000) coping is influenced by personality dispositions including optimism, neuroticism, and extraversion. A study conducted by Khan, Siraj, and Li (2011) aimed to explore the relationship of coping strategies with positive psychological strengths i.e., hope, optimism, self-efficacy, and resiliency and with the Big Five personality factors among undergraduate university students. They found that positive psychological strengths and the Big Five personality dimensions (such as neuroticism, introversion, extroversion, openness, and conscientiousness) were significantly related to the use of adaptive coping strategies. Mixed method research into the contextual variables that are antecedents to adaptive coping of teachers, is recommended.

- Research using LCA could be extended to investigate the coping behaviour of teachers in each of the specified profiles. This could shed some light on how various groups of teachers deal with their stressful demands in the South African context of education. Various cultural groups of teachers' profiles could also be qualitatively explored for such purposes.

### **Recommendations for Practice/Practical Application**

The results of this study emphasized the importance of self-efficacy in teachers' management of stressful situations in the classroom. The confidence of teachers in their ability to deal with challenging situations in the educational context efficaciously may decrease stress. The challenge is to give teachers the kind of support needed to remain in the profession, but also to develop into the kinds of educators able to teach to contemporary high standards (Sparks, 2013).

The following are recommended:

*Teacher training:* courses could be designed with the purpose of identifying teachers who are struggling to cope with educational demands, to raise their awareness of the types of stressors they may face, and to train them in problem-solving skills. By learning more adaptive ways of coping (e.g., support seeking, positive reinterpretation, planning etc.) and ways to use their sense of self-efficacy, teachers may gain the necessary resources that allow them to be more successful in resolving stressful episodes when they arise. In addition, courses such as these could be incorporated into teacher preparation programs so that novice teachers are better prepared to deal with the demands they may encounter (Stansbury & Zimmerman, 2000).

*Support structure for novice teachers:* results from this study can be used to promote institutional and peer support structures for novice teachers as they enter the teaching system, providing initial personal and emotional support, expanding to include specific task- or problem-related support.

*Promoting collegial collaboration:* according to Sparks (2013), some schools have existing structures that foster collaboration between teachers, such as grade-level teams that coordinate instructional planning. Stansbury and Zimmerman (2000) stated that such teams provide some degree of structure and support teachers to manage aspects such as workload, curriculum management, and admin.

*Early identification of teacher burn-out:* early identification could aid in planning for specific teacher support activities, such as the orientation of staff members, skills training etc. It also allows for early planning of support structures and intervention programs (Sparks, 2013).

### **Personal Reflection**

As a teacher myself, I have experienced the same challenges faced by the teachers who participated in this study. I have experienced various cases of disciplinary issues and witnessed incidents of teachers being victims of bullying. My colleagues and I have

experienced the insensitive and often ill-informed demands from the department and have first-hand knowledge of what it means to “stress” as an educator.

Approximately four years ago, after thinking an Honour’s Degree in Psychology taught me everything about research (and perhaps vainly also about life in general) I consulted Prof. Van Eeden for the first time and wanted to know the answers to a few issues from my personal experience as a teacher, namely “how do teachers cope with their stress?” and “what enables some teachers to cope more optimally with their stressors?” The answers to these questions were answered on my journey with Prof. Van Eeden and reading more literature than ever before in my life, which also taught me a deeper and more positive perspective of the coping process and the value of using self-efficacy in a teacher’s management of stress. I have learned that our well-being, vitality, and optimal functioning are actually within our own reach and our optimism and satisfying feelings associated with the challenges of our jobs are mostly our responsibility to fulfil.

My greatest wish for my fellow teachers is to realise their magnificent strengths within themselves and to believe in their own ability to cope with their daily challenges.

As the wise Mahatma Gandhi's said: *“If I have the belief that I can do it, I shall surely acquire the capacity to do it even if I may not have it in the beginning.”* These words comprise the very same lesson I have learned through this journey of mine and I hope to inspire hope in my fellow teachers.

I am definitely planning to start my PhD in the near future since my curiosity for research is not yet satisfied and was strongly fuelled by this study. For now, however, my wish is to pursue my goals as a mother to my adorable two-year-old daughter and renewing my passion and self-confidence in my career as a teacher.

## **Conclusion**

It can be finally concluded that this study was successful in reaching all the aims set and thereby answering the research questions. The researcher wishes to acknowledge and express appreciation to the N=283 teachers who were willing to give their opinions on measures of their perceived stress, their sense of coping self-efficacy, and their use of adaptive coping strategies, while functioning daily in the South African educational context.

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