Stress, coping strategies, perceived personal control and well-being at work of teachers

V Marais-Opperman

orcid.org / 0000-0003-3465-0899

Thesis accepted for the degree Doctor of Philosophy in Psychology at the North-West University

Promoter: Prof C van Eeden

Co-promoter: Prof S Rothmann

Graduation: May 2020

Student number: 12183687

Acknowledgements

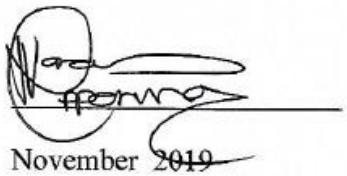
I would like to express my utmost gratitude towards the following people and entities:

- My Heavenly Father, for blessing me with the courage, abilities and determination to complete this study,
- Prof. Chrizanne van Eeden, my supervisor and mentor. Without her encouragement, patience, and hard work this thesis would not have been possible. You are an inspiration and blessing to my life,
- My mother, for her love, faith and unconditional support in every venture I have ever undertaken.
- My loving husband and children, Hendrik, Hendri and Vasti for your continuous support, love, motivation and patience,
- My co-promoter, Prof. S. Rothmann, for his statistical expertise and guidance,
- Mr F. Van Eeden, for all the assistance in the data capturing and technical editing of my thesis, your contribution is highly appreciated,
- Elzané, for many hours of listening, laughing and words of motivation,
- To my dear friend Engela, for your help with data capturing, your interest and encouragement,
- Martie Esterhuizen, manager of information services at the NWU library (Vaal campus), for your unconditional support and help with the research,
- Mrs Linda Scott, for the language editing on such short notice,
- The research participants, for making the sacrifice to complete my questionnaires with enthusiasm,
- The Department of Education, the appropriate parties at the Sedibeng East District, as well as the participating schools, for their assistance, participation, and support.

Declaration

I, Vasti Marais-Opperman, herewith declare that this study *"Stress, coping strategies, perceived personal control and well-being at work of teachers"* is my work and that all sources have been fully referenced and acknowledged accurately at the time of publication.

This study is presented in article format. The researcher, Vasti Marais-Opperman, conducted the research and wrote the manuscripts. Prof. C.Van Eeden acted as promoter and Prof. S. Rothmann as co-promoter.

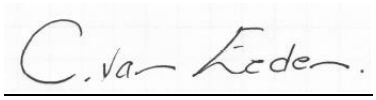


November 2019

Permission of Supervisor

I, Chrizanne van Eeden, hereby give permission to Vasti Marais-Opperman to submit this document as a thesis for the qualification PhD in Psychology.

Furthermore, I confirm that this thesis has been written in the article format that is in line with the 2019 General Academic Rules (5.3.1.1) of the North-West University. In line with Academic Rules 5.3.2 and 5.10.5, research articles for future publication are included in this thesis.



Promoter: Prof. Chrizanne van Eeden

October 2019

Declaration by Language Editor

Ms Linda Scott
English language editing
SATI membership number: 1002595
Tel: 083 654 4156
E-mail: lindascott1984@gmail.com

14 November 2019

To whom it may concern

This is to confirm that I, the undersigned, have language edited the thesis of

Vasti Marais-Opperman

for the degree
Philosophiae Doctor
entitled:

Stress, coping strategies, perceived personal control and well-being at work of teachers

The responsibility of implementing the recommended language changes rests with the author of the thesis.

Yours truly,

Linda Scott

Summary

Teaching is a sophisticated profession of passion that extends beyond the academics of teacher and learner. The work of a teacher is complex and challenging as there is no limit to the ever-changing roles and responsibilities expected from a teacher. South African teachers are expected to manage various challenges and cope effectively with stressors such as poor learner discipline, administrative demands due to continuous changes made to curriculum and unrealistic learner performance expectations on teachers by the Educational Department.

The many uncertainties experienced, an inability to effectively cope with various demands forced upon teachers and the adapting to changes and challenges appear to contribute to undesirable, sometimes detrimental consequences on teaching and learning. An intensive review of relevant literature indicates that the teaching profession is an extremely stressful occupation. Exposure to these stressful conditions has psychological consequences for some teachers.

This study included 209 teachers from eight schools (primary, secondary and special education schools), under jurisdiction of the Gauteng Department of Education in the Vereeniging, Sedibeng East District in the Gauteng province. The data were obtained in two measurement sessions from the same group of participants (longitudinal) referred to as Time 1 and Time 2.

The study aimed to investigate whether teacher stress could be effectively managed through or positively influenced by adaptive coping strategies and a sense of personal control and whether these factors could enhance their psychosocial well-being at work. In relation to that, the study's aims included the following objectives: (a) study the existing research findings in literature pertaining to the stated variables, (b) determine by means of structural equation modelling the statistical relationships between the stated variables at two occasions, four months apart, (c) determine direct and indirect effects between the variables, (d) identify latent profile (LPA) groups in participants for perceived stress and perceived personal control, (e) determine whether profile memberships could be predicted by and correlate with participants' performance on the other variables used in the study, (f) determine whether, of the variables mentioned, could predict the intention to leave the profession and (g) investigate if a four months' time interval had an effect on participants' scores on the variables measured.

The comprehensive, critical literature review conceptualised the following concepts, their antecedents, consequences and influential relationships: perceived stress, coping and

coping strategies, perceived personal control, flourishing at work, psychosocial well-being and intention to leave.

The findings of the study were amongst others, that it identified four latent stress profiles for teachers, namely stress resisters, manage stress, overloaded and highly stressed. Those identified as stress resisters and manage stress scored significantly lower on two coping strategies, namely denial and disengagement, and self-blame, than those who showed stress-overloaded and highly stressed profiles. Results further indicated two latent profiles of personal control, labelled as doubtful personal control and confident personal control. Mental health of teachers was predicted by low negative stress and active coping. Low mental health at work and high negative stress predicted the intention to leave the teaching profession. It appears that teachers who experience positive stress are more mentally healthy, experiencing higher emotional well-being, psychological well-being and social well-being at work over time.

Key terms: coping and coping strategies, flourishing at work, intention to leave, perceived personal control, psychosocial well-being, stress.

Table of Contents

Chapter 1

Literature and methodological framework of the study

Key words: coping, coping strategies, intention to leave, perceived personal control, psycho-social well-being, stress

Introduction

Teachers enter their profession with great optimism and excitement, having expectations for their chosen career. Unfortunately, their once clear vision for the future and determination towards their mission soon changes when confronted with seemingly continuous stressors in the educational environment. Various factors contributing to the stress that teachers experience may include overcrowding of classrooms due to a lack of qualified and experienced teachers, student misbehaviour, low self-motivation among learners and time constraints. These stressors can either motivate the teacher or result in discouragement, negativity, a sense of hopelessness or even burnout (Jackson, 2004). This study was conducted in the field of education, where teacher stress appears to be high and have a significant effect on adjustment, adaption to change and, as such, influences teachers' psychosocial well-being and the quality of their work. It is generally assumed in this research, that a sense of perceived personal control and adaptive coping skills of teachers may decrease their stress experience and foster their psychosocial well-being.

This chapter serves as the theoretical and conceptual background of the study. The constructs investigated in this research and their theoretical frameworks are described, as well as the research question, aims and methodology used. Since the literature background of the research is given in this chapter, some duplication thereof may occur in other parts of the thesis. The problem statement pertaining to teacher stress that motivated this study is discussed below.

Problem Statement and Research Rationale

Rothmann (2015) states that educators are regarded as change agents in the conceptual age and thus valuable human capital for the South African educational society. Every effort should thus be made for them to feel and function well in the classroom.

However, the unstable nature of the local teaching profession demands from teachers to cope effectively and adequately with ongoing changes, demands and challenges, causing them to experience continuous pressure and stress (Jackson & Rothmann, 2005). According to Chan (2006), uncertainties experienced, an inability to effectively cope and adapt to changes and challenges, together with ongoing transformation and transition within the South African education system, can contribute to unproductive outcomes and may have detrimental consequences on teaching and learning and for teachers themselves. The seriousness of the situation was indicated in the local press (Marais, 2016) where it was

reported that 5 000 South African teachers resigned in 2015 and that close to 30 000 teachers left the profession since 2011. In 2014, about 14 000 teachers resigned, of which nearly 4 600 teachers resigned from teaching in November 2014 (Nkosi, 2015). Approximately 410 000 South African teachers are employed by the Department of Basic Education, placed across nine provinces that are responsible for educating more than 12.9 million learners (Mhlanga & Maarten, 2018). Poor discipline, administrative demands due to the new curriculum, negative management and the pressure on teachers by the Department of Basic Education were reported as the causes of unbearable teacher stress.

The effects of such work-related stress on teachers is becoming a great concern and a matter that seriously needs to be addressed (Kokkinos, 2007; Monyatsi, Kamper, & Steyn, 2006; Van Dick & Wagner, 2001; Willers, 2009; Yong & Yue, 2007). Yet, Folkman and Moskowitz (2004) state that in such a difficult situation, the question arises: why do some teachers apparently cope better with demanding conditions or stressful situations than others? Research done by Mearns and Cain (2003) found that not all teachers experience the stressors or perceive stressful situations usually associated with chronic stress, to such an extent that they feel powerless or inadequate. Studies indicate that these teachers are able to manage their stressful environment through utilising resources (Skinner & Zimmer-Gembeck, 2011) and applying adaptive coping strategies (Valle, Huebner, & Saldo, 2006). In this regard, Skinner et al. (2011) argue that a person's sense of perceived control is a powerful resource when coping with stressful experiences. The authors state that research on perceived control reported the role thereof in supporting salutary mastery-orientated coping in most stressful life events, while indicating the vulnerabilities induced by a sense of helplessness and loss of control, as well as the effects of these feelings in undermining how people deal with challenges and difficulties. An impetus for the study came from Compas (2009, p. 96) who succinctly state,

> The controllability of stress appears to be information that may be processed at an automatic and a conscious level and serves to shape and organise the ways that individuals mobilise their responses. However, change in the nature of perceptions of control and the ways in which the objective and perceived controllability shape coping responses across development is not known and is an important agenda for future research.

This study aimed to investigate whether teacher stress could be effectively managed through or positively influenced by a sense of perceived control and by adaptive coping strategies and whether these factors could enhance their psychosocial well-being. The specific research question was, therefore, proposed as: what are the relationships between stress in the teaching context, coping strategies, a sense of perceived control, psychosocial well-being and flourishing at work, will these relationships change over a given time period and would these variables predict the intention of teachers to leave the profession? This research question will be further clarified in a following section by means of the aims of the research.

Stress and Teachers' Experiences thereof

Stress and the perceptions thereof by teachers as part of their work context, will be described below.

Stress

Stress is a part of our daily lives that can be considered a modern-day societal dilemma due to its often-debilitating nature and this seems particularly true in the teaching profession (Chaaban & Du, 2017). Stress is an occurrence to be recognised and addressed in various professions and the teaching profession is no exception (Olivier & Venter, 2003). Various conceptualisations of stress exist in line with the theoretical approaches from which they stem. The General Adaptation Syndrome was Selye's (1956) seminal model, which defined stress from a bio-homeostatic approach. The theory of Lazarus and Folkman (1984), however, indicates that stress is a wholly psychological rather than a physiological phenomenon in which psychological stressors have a greater impact on functioning. Recent views on stress either combine the bio-psychosocial aspects of experiencing stress or focus more on the psychological effects thereof, as the following conceptualisations will show.

According to Kassin, Fein, and Markus (2014), stress is an unpleasant state of arousal that arises when one perceives that the demands of a situation threaten the ability to cope with it effectively. This stimulus, generally, is called a stressor, which could be any factor that causes stress. Moss (2008) views stress as any objective condition or change in the work environment that is perceived as potentially harmful, threatening, challenging or frustrating, or any set of circumstances related to work that requires change in the individual's ongoing life pattern. On the other hand, Chung (2001) argues that stress is a mental and physical strain that people experience when they pursue a goal, while Greenberg and Baron (2003) state that

stress is the pattern of emotional states, cognitions and physiological reactions occurring in response to stressors.

Stress thus originates from various sources, has an impact on both the physical and mental states of the individual (Dougall & Baum, 2012) and occurs when the individual perceives a situation to be threatening or challenging, evoking a feeling of inability to meet demands or achieve goals (Steyn & Kamper, 2006). Moorhead and Griffin (2004) further view stress as being a person's adaptive response to a stimulus that places excessive psychological or physical demands on the individual and state that the way in which an individual interprets, reacts to and manages stressors (perceived as positive or negative), can have an influence on their emotional, physical and/or mental state (also see Aldwin, 2011; Frazier, 2002; Frazier, Steward, & Mortensen, 2004; Torres & Pritchard, 2006).

The well-known and extensively researched transactional model of stress and coping of Lazarus and Folkman (1984, see Figure1), indicates individual differences in appraisals of stress, where these appraisals arise when the environmental demands exceed the individuals coping resources, especially in situations that are personally significant, such as the teaching context (Aldwin, 2011; Folkman, 2011; Lazarus & Folkman, 1984; Skinner & Zimmer-Gembeck, 2011). The transactional model can be defined as a dynamic stress process, with the focus on interpretation of stressors rather than on the stressful environment (Lazarus & Folkman, 1984; Smith & Baum, 2003). The appraisals of stress determine whether the environmental circumstances are stressful and are likely to be influenced by person-based factors in such a way that it will influence how an individual chooses to cope with the stressor (Pierre, 2013). Consequently, two types of appraisal are considered, namely primary and secondary appraisals (Endler & Parker, 2000; Folkman, Lazarus, Gruen, & DeLongis, 1986), in which primary appraisal concerns immediate action to negative experiences, while secondary appraisal relates to coping responses (Folkman et al., 1986; Lazarus & Folkman, 1984; Smith & Baum, 2003). Torres and Pritchard (2006) explain that the appraisal of stressful circumstances can affect the perception of having control over the stressor, which plays an integral role in effectively managing stress. The transactional model is depicted in Figure 1.

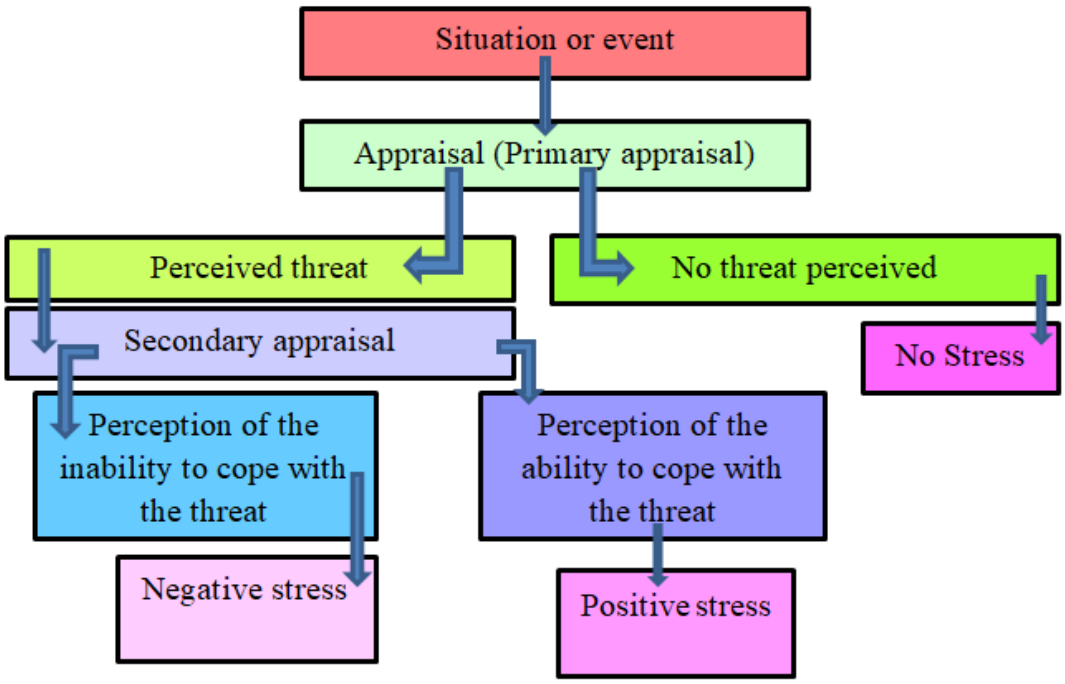


Figure 1. Transactional model of stress and coping adapted from Lazarus and Folkman (1984)

As indicated by the transactional model, stress could be either disruptive or adaptive. As far as the latter is concerned, Sapolsky (1996) states that the body's stress response was designed to improve physical and mental functioning to meet life's demands for the purpose of survival, while Lazarus (1974) notes that stress is an inevitable aspect of life that is crucial in the development of strengths needed by individuals to survive and flourish. Crum and Lyddy (2014) indicate how the adaptive nature of stress has been disregarded in recent times in favour of *stress-is-debilitating* belief systems or mindsets. The authors state that the effects of stress could be resourceful rather than toxic and are not pre-determined but vary, based on a complex set of factors. Therefore, stress could adaptively lead to bio-psychosocial thriving and/or stress-related growth. According to Crum and Lyddy (2014), the *stress-is-debilitating* mindset contrasts with a *stress-is-enhancing* mind-set that could lead to enhanced health, coping, performance and well-being. For the purpose of this research, one wonders whether a sense of personal control over the stress experienced and the stress outcomes could be part of such *a stress-is-enhancing* mindset.

Teachers' stress

The reality of the teaching context is that the demands on South African education and schools increase and evidently, so does the incidence of stress within the teaching profession. The question arises as to whether adequate resources and supportive measures are in place to ensure prevention and effective management of teacher stress, resulting from the significant transitions undergone in the South African educational system over the past two decades (Naidoo, Botha, & Bisschoff, 2013). Paulse (2005) emphasises that the South African education system has undergone fundamental changes due to political changes in the country and teachers have to adapt to the new reality. Teachers, thus, increasingly report that their work environment is stressful and that they are struggling to cope with daily job demands and challenges. Compared to research conducted on teacher stress in other countries, South African studies indicate that teachers are exposed to a variety of stressors and that they experience higher levels of stress than experienced in other occupations and teachers in other countries (Chang, 2009; Grenville-Cleave & Boniwell, 2012; Kokkinos, 2007; Kyriacou, 2001; Steyn & Kamper, 2006; Van Dick & Wagner, 2011). South African teachers are exposed to a wide variety of multi-dimensional stressors within the work environment, such as inadequate working conditions, role conflict and ambiguity, pupil misbehaviour, time pressures, the threat of burnout, work pressure, little involvement in decision making, stereotypes and discrimination, as well as inadequate remunerations (Jackson, Rothmann, & Van der Vijver, 2006). Kyriacou (2001) states that environmental stressors that teachers experience on a daily basis include working with unmotivated learners, poor discipline, time constraints, unfavourable working environment and heavy workload, while Grenville-Cleave and Boniwell (2012) identify poor socio-economic status, increasingly diverse learners, adverse working conditions and a lack of emotional and social support, as challenges that teachers confront. Teacher stress is a combination of negative emotions, such as anxiety, tension, anger and frustration in a stressful environment that may influence detrimentally their optimal functioning at both psychological and physical levels. This is alarming and is triggering a greater interest among researchers to examine this study field closely, while also giving rise to an increased recognition of the relationship between mental and physical health and work-related stress (Steyn & Kamper, 2006; Williams & Gersch, 2004). Psychological effects of teachers' response to chronic stress are among other factors, reduced psychological well-being (Bach, 2000) and burnout (Jackson & Rothmann, 2005; Mearns & Cain, 2003).

Stress appears to be a fundamental aspect of adjustment and adaptation to environmental change and challenge and, as such, it plays a critical role in human behaviour (Dougall & Baum, 2012). However, Chang (2009), Kyriacou (2001) and Van Wyk (1998) find that research done worldwide indicates that teachers' stress is becoming endemic, which could have serious implications for the physical and mental health of teachers. Illustrating this, studies by Smith (2009) and Van Wyk (1998) found that teachers in South Africa have more medical insurance claims than persons in other professions, have a four-year shorter life expectancy than the national average and often blame stress as the reason for sick leave from school. It was reported that more educators are seeking medical boarding, absenteeism has increased and educators resign due to a lack of job satisfaction (Naidoo et al., 2013). Naidoo et al. (2013) also indicated that more than 4 500 teachers resigned during 2007 and 2008, while 1 800 died and more than 500 were discharged because of ill health (Naidoo et al., 2013). It was further reported that 5 000 teachers resigned in 2015, that close to 30 000 teachers left the profession since 2011 and that most teachers resign and leave the profession before reaching the set retirement age of 65 (Marais, 2016). The impression that working as an educator may, due to negative experiences, result in illness and emotional burnout, is thus supported by much evidence (Van Dick & Wagner, 2001).

Despite the bleak picture painted above, stress remains a call toward adjustment and adaptation to environmental change and challenge and this is done by means of coping. Coping with stress is an ongoing process that develops over time and based on an evaluation of personal coping resources, individuals can adjust or modify their initial appraisals of a given situation (Aldwin, 2011). According to Lazarus and Folkman (1984, as mentioned in Aldwin, 2011; Kassin et al., 2014) the stress-and-coping process is an unceasing transaction between an individual and his or her immediate surroundings, which in this study refers to the teacher and the demanding educational context in which they have to operate. Engelbrecht, Swart, and Eloff (2001) state that the specific stressors at work, the appraisal of stressors and the teacher's perceived coping ability have a significant influence on teachers stress level, while Compas (2009) and Skinner and Zimmer-Gembeck (2011) indicate the importance of a perceived sense of personal control and perceived controllability of the stressors to shape responses to the stress experienced and the ability to cope, which will be discussed below.

Coping and Coping Strategies

Stress and its potential illness or wellness related outcomes was explained above. At the centre of the stress-illness/ wellness relationship, is the process of coping (Litt, Temen &

Affleck, 2011), or "the cognitive and behavioural efforts used to regulate distress, manage the problem causing distress and sustain positive well-being during stressful situations" (Folkman, 2011, p.76). The coping construct stems from several different theoretical approaches, such as (1) The original psychodynamic theories that focused on defence mechanisms as means by which the ego unconsciously dealt with the anxiety of stress situations. The theoretical debate on whether coping is conscious and voluntary or unconscious and involuntary is still present in current coping theory; (2) The coping styles approaches that focused on typical ways of dealing with problems and claiming that coping is rooted in personality; (3) The dual process model, which argues that individuals seem to alternate between several dichotomies in a situation such as positive and negative appraisals, approach and avoidance coping, etcetera. Coping tends to be a complex set of different strategies that may be directed at various aspects of the stressor and that show changes over time; (4) the cognitive or process theories that focus on specific strategies in given situations. Such strategies are thought to be guided by the appraisals of the situation, are conscious, flexible and responsive to situations and contextual factors (Aldwin, 2011; Ironson & Kremer, 2011).

From the various theoretical approaches flowed a myriad of coping descriptions, such as coping refers to how individuals mobilise, coordinate, manage and direct their actions and behaviour during challenging conditions, threat or loss (Aldwin, 2011); coping are efforts of self-regulation in times of duress (Carver & Scheier, 1999); coping is an ongoing process between the individual and the situation where the perceived ability of the individual will determine how effective the stressor is managed (Meehan, Peirson, & Fridjhon, 2007); and coping is to diminish the physical, emotional and psychological strain that is associated with stressful circumstances (Cronje, Temane, & Wissing, 2011; Tuncay, Musabak, Gok, & Kutlu, 2008).

Furthermore, conceptual frameworks or models of coping abound, such as the dual process model of Stroebe (2011); the hedonic adaptation to positive and negative events of Lyubomirsky (2011); the meaning making model of Park (2011); the five steps model of positive coping of Aspinwall and Taylor (Aspinwall, 2011); the functional components model of Ironson and Kremer (2011); and the multi-level, multivariate model of Litt et al. (2011). A few of the older models were the stress resistance model of Holahan and Moos (1990) and the conservation of resources model of Hobfoll (1989; 2011). An example of a conceptualisation of the coping process is that of Holahan and Moos (1994), as depicted in Figure 2. The

authors identify factors within the individual's environmental system, which are prominent social supports and resources, as well as in their personal system, which includes psychological traits and demographic attributes, all of which are relatively stable and influence life circumstances (Carr, 2011). These factors affect both health and well-being directly and indirectly by means of appraisal and coping processes. The central function of coping is depicted by its position in the schematic outline, with the bi-directional pathways indicating the possibility of reciprocal feedback occurring at any stage of the stress and coping process (Holahan & Moos, 1994).

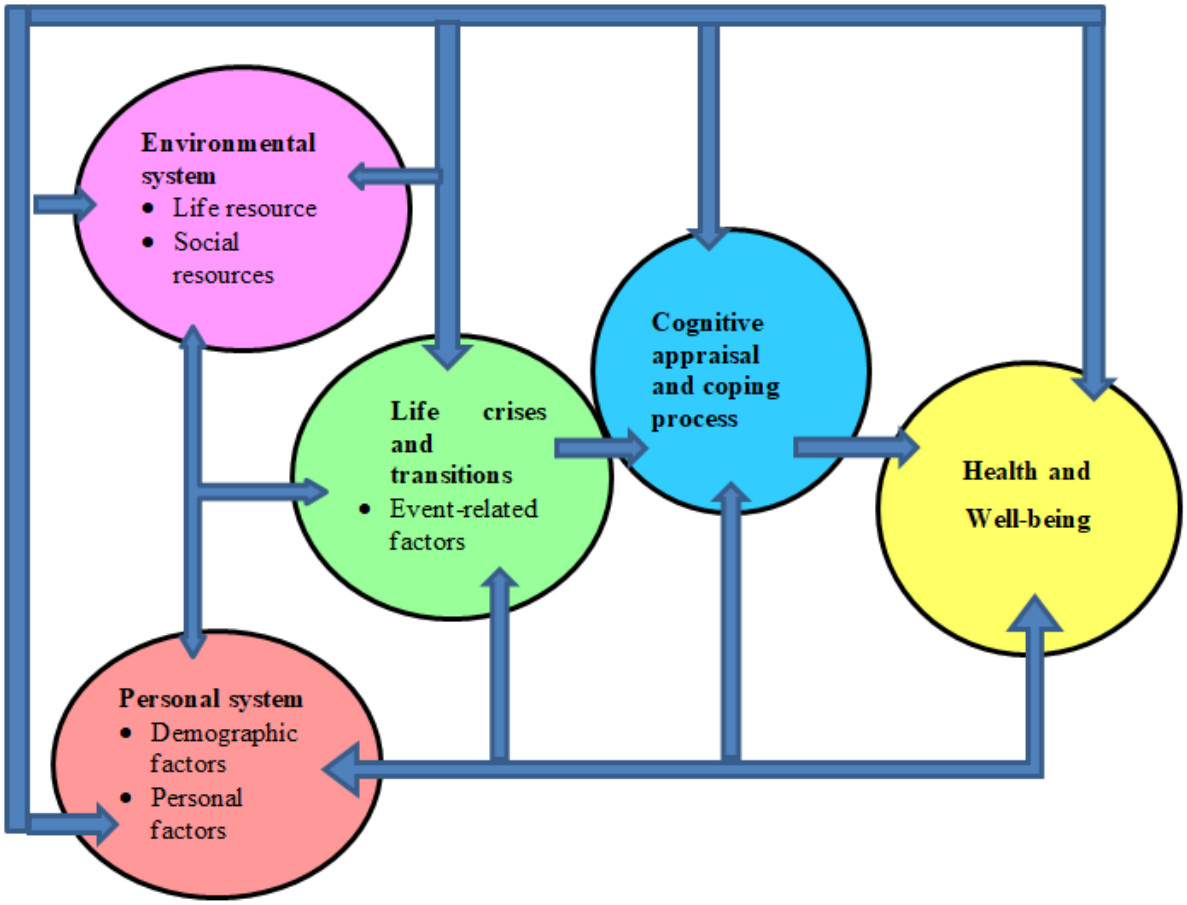


Figure 2. The coping process adapted from Holahan (1996, p.27)

Coping, furthermore, has been called a process of adaptation and a stabilising factor that maintains psychosocial functioning during stress (Moos & Schaefer, 1993), as well as individuals' use of adaptive strengths and capacity for resiliency and constructive action in the face of challenge (Holahan & Moos, 1994). According to Aldwin (2011) coping is an adaptive process that potentially mediates the effects of risk or adversity during the development of competence (Aldwin, 2011). Effective coping enables individuals to resolve

problems, relieve emotional distress, strive to succeed and accomplish goals (Brown, Westbrook & Challagalla, 2005). Adaptive coping has also been referred to as positive coping (Compton, 2005), constructive coping (Weiten, 2013) and problem solving coping (Heppner & Lee, 2009), while Carver (1997) identifies venting, positive reframing, proactive coping and active problem solving, as adaptive coping skills that individuals most frequently use in their efforts to manage stress. Weiten (2013) proposes the following features of constructive or adaptive coping based on research, namely it involves confronting problems directly, is task relevant and action-orientated; it is based on realistic appraisals of the stress and available coping resources, in which some short lived self-deception may be adaptive; and it entails the recognition and regulation of potentially disruptive emotional reactions to stress. According to Chesney, Neilands, Chambers, Taylor, and Folkman (2006) adaptive coping refers to situations in which there is a fit between the perceived controllability of the stressor and the choice of coping strategy to be utilised, given a specific situation. Such coping strategies are described below.

Coping strategies

Previously in this chapter, the stressors inherent in the teaching context were indicated and again the question emerges of, given the fact that all educators face similar stressful conditions, in the educational environment, why do some apparently function well and are able to cope, while others do not? The answer may be found in the nature of coping strategies applied by teachers. Coping strategies are cognitive, emotional or behavioural ways that people use to adjust in effective ways to challenges and to build resources for further positive coping (Compton, 2005). Coping actions or strategies are determined by people's attributes, knowledge of coping options and subjective beliefs about the usefulness of options (Ebersöhn, 2007). Ebersöhn and her colleagues found that effective coping strategies of teachers decrease the effects of stress, enhance the development of skills and competencies to meet the demands of teaching and assist in identifying and understanding the sources of stress (Ebersöhn & Eloff, 2002; Ferreira, 2013; Ferreira & Ebersöhn, 2012). The effectiveness of coping strategies also depends on the characteristics of the particular situation, the appropriateness of the strategy and the skill with which it is carried out, according to Passer, Smith, Holt, Bremner, Sutherland, and Vliek (2009), who further stated that "people are likely to adapt well to the stresses of life if they have mastered a variety of coping techniques and know how and where to apply them most effectively" (Passer et al., 2009, p.740). After a review of numerous coping strategies, Skinner, Edge, Altman and Sherwood (2003)

concluded that there are five types of strategies, namely problem solving, support seeking, avoidance, distraction and positive cognitive restructuring.

Coping, however, has traditionally been divided into two main responsive strategy categories that include thoughts and actions that individuals use in stressful situations (Folkman, 2011; Lam, Alvarado, & Lee, 2014; Lazarus & Folkman, 1984; Zambianchi & Bitti, 2013), namely *problem-focused coping*, referring to those responses that are directed at utilising cognitive and behavioural strategies in order to diminish stress by overcoming the source of the problem, thus managing the problem itself (Chesney et al., 2006; Folkman, 2011; Kassin et al., 2014). Problem-focused coping addresses the perceived stressor in order to manage and/or modify the actual problem, using strategies such as planning, active coping and suppressing competing activities (Lam et al., 2014; Mayordomo-Rodríguez, Meléndez-Moral, Viguer-Sengui, & Sales-Galan, 2014). Problem-focused coping strategies attempt to confront and deal directly with the demand of the situation or to change the situation so that it is no longer stressful. It seems that creativity, wisdom and conscientiousness are individual qualities that are important for facilitating problem-focused coping strategies.

Emotion-focused coping, referring to responses concentrating on the regulation of emotion generated by the stress appraisal process, such as anger, sadness, anxiety, fear, eagerness and excitement (Folkman, 2011; Lam et al., 2014). Emotion-focused coping attempts to decrease the duress caused by the stressor; it involves strategies such as seeking emotional support, acceptance, denial and positive reinterpretation (Lam et al., 2014). Some forms of emotion-focused coping involve appraising the situation in a manner that minimises its emotional impact, while other forms involve either avoidance or acceptance of the stressful situation (Passer et al., 2009). Emotion-focused coping strategies have in the past been regarded as less favourable and/or effective, but Stanton (2011) clearly indicates how these views have been disproved and that aspects of regulating emotions during stress, such as emotional processing and expression are crucial to effective coping.

According to Mayordomo-Rodríguez et al. (2014), both problem- and emotion-focused coping can facilitate each other, although individuals use both coping strategies when needed, problem-focused coping strategies are mostly employed and more often associated with favourable adjustments to stressors (Passer et al., 2009). Furthermore, for all the coping styles a distinction may be made between functional and dysfunctional strategies (Carr, 2011) as shown in Table 1.

Table 1

Functional and dysfunctional coping strategies adapted from Zeidner and Endler (cited in Carr, 2011, p.216)

Type	Aim	Functional	Dysfunctional
Problem-focused	**Problem solving**	• Accepting responsibility for solving the problem • Seeking accurate information • Seeking dependable advice and help • Developing a realistic action plan • Following through on the plan • Postponing competing activities • Maintaining an optimistic view on one's capacity to solve a problem	• Taking little responsibility for solving the problem • Seeking inaccurate information • Seeking questionable advice • Developing unrealistic plans • Not following through on plans • Procrastination • Holding a pessimistic view of one's capacity to solve the problem
Emotion-focused	**Mood regulation**	• Making and maintaining socially supportive and empathic friendships • Seeking meaningful spiritual support • Catharsis and emotional processing • Reframing and cognitive restructuring • Seeing the stress in a humorous way • Relaxation routines • Physical exercise	• Making and maintaining destructive relationships • Seeking meaningless spiritual support • Unproductive wishful thinking • Long-term denial • Taking the stress seriously • Drug and alcohol abuse • Aggression
Avoidance-focused	**Avoiding source of stress**	• Temporarily mentally disengaging from the problem • Temporarily engaging in distracting activities • Temporarily engaging in distracting relationships	• Mentally disengaging from the problem for the long term • Long-term engagement in distracting activities • Long-term engagement in distracting relationships

According to Carr (2011), dysfunctional coping strategies may result in short-term relief, but in the long run, it seems ineffective to resolve stress-related problems. In situations where stress is uncontrollable, emotion-focused coping strategies, such as maintaining socially

supportive friendships are appropriate and internal working models of such relationships (attachment bonds) are essential for developing of this skill.

Donnelly and Amaya-Jackson (2002) argue that ways in which an individual handles stress is an endless changeable process, shaped by the context from which the stress is generated. This means that coping is influenced by situational factors and events that individuals are daily faced with. Aldwin (2011) is of the opinion that coping is responsive to situational demands and is influenced by both personality and situational characteristics. Such an interactive coping process generally results in change which can be either positive, negative or sometimes a combination of both. According to the Coping Consortium (as cited in Aldwin, 2011), research that focuses on actual stressful interactions and the resulting coping processes, could promote knowledge regarding the ways individuals – specifically teachers – manage to cope with stress and can be valuable with regard to the development of positive resources.

In this study, the relationship of stress, coping strategies, perceived personal control and psychosocial well-being will be investigated, as well as the mediation/moderation value of coping in the relationship between stress and indicators of psychosocial health (Litt et al., 2011). Litt et al. furthermore, state that " the individual at any given moment in response to stressors can feed back to alter these environmental stressors, as well as one's internal state and in turn alter appraisals and the choice of subsequent coping responses" (2011, p. 387). Thus, the teachers' stress, perceived personal control, coping and psychosocial well-being will be assessed on two occasions in this research, in order to investigate the changeability of responses as was assumed by Litt et al. (2011).

As was indicated before, perceived personal control or controllability of the stressor, are variables seen by various researchers as resources in the coping process. These variables will be discussed below.

A Sense of Perceived Control

Teachers are continuously confronted with events, situations and adversities that are emotionally, cognitively and physically challenging and that influence their ability to function well within their given work environment. Many teachers however, find ways to cope by turning to internal strategies, actions and processes, which assist them in making sense of the stressful context they find themselves in and in managing stressors, which challenge their ability to maintain control over given situations (Fishman, 2014). It is

generally assumed that circumstances perceived as overwhelming are more distressing than those situations perceived as somewhat more personally manageable (Frazier, 2002).

Perceived personal control was traditionally defined as the beliefs or perceptions that one has the ability, resources or opportunity to influence one's environment in order to achieve positive or more favourable outcomes or to avoid negative effects through one's own actions (Fishman, 2014; Kassin et al., 2014; Liu & Yussen, 2005; Thompson & Schlehofer, 2008; Wallston, Wallston, Strudler, Smith, & Dobbins, 1987). Regulatory beliefs launch and guide coping behaviour and such beliefs that regulate actions are control beliefs, or the sense that *I can do it*, referring to an expectation that the individual can produce desired outcomes by having a sense of control over the challenge (Aldwin, 2011). Much of the literature that examines and describes how individuals who experience perceived personal control act during stressful encounters, ties in well with research on coping that examines acquired personal and social resources, different kinds of coping and how coping contribute towards an individual's physical, psychological and social functioning (Aldwin, 2011; Folkman & Moskowitz, 2004; Skinner & Zimmer-Gembeck, 2011). Effective coping and problem-solving skills, presumably, reinforce a sense of perceived personal control that in turn will decrease anxiety and stress (Hogendoorn et al., 2014). Perceived personal control is considered an influential personal resource, which an individual can utilise when faced with challenging or daunting circumstances (Skinner & Zimmer-Gembeck, 2011).

Perceived personal control (PPC) has been conceptualised in different ways. Averill (1979) introduced a tripartite structure of PPC that includes three dimensions, namely behavioural control, decisional control and cognitive control. Behavioural control refers to the belief that action can be taken to change the situation, decisional control refers to the belief that there are different courses of action that could be chosen to change a situation and cognitive control refers to understanding and finding meaning in a situation and to using patterns of thinking that can reduce the stressfulness of a situation (McAllister, Wood, Dunn, Shiloh, & Todd, 2012).

Thompsons' (1981) typology distinguished between behavioural and cognitive control and emphasise that the perception of control is more significant than the actual control (Berkenstadt, Shiloh, Barkai, Katznelson, & Goldman, 1999, Thompson, 1981). The perceived ability to avoid negative outcomes may result from personal beliefs that one has control over adverse events, whilst the perceived ability to cope with negative outcomes may stem from beliefs about direct or indirect coping strategies that one uses to reduce distress

(Bryant, 1989; Thompson, 1981). Thompson accounts for the time dimension by adding the category of retrospective control referring to beliefs about the causes of a past event, to the control typology.

The two-process model, as proposed by Rothbaum, Weisz, and Snyder (1982), distinguished between primary control and secondary control. The two-process model focused exclusively on an individual's judgement about control over negative events and control over feelings in response to negative events. Primary control involves taking action to achieve desired outcomes, whereas secondary control refers to changing oneself to adapt to the environment or accepting one's circumstances as they are (Bryant, 1989; Thompson, 2011; Thompson & Schlehofer, 2008). According to Bryant and Thompson, acceptance increases a sense of control and reduces the discrepancy between desired and achieved outcomes. Thompson and Schlehofer (2008) stated that this approach to personal control suggests that direct action in the environment and adjusting to the environment are both valuable sources of perceived personal control. The two-process model emphases the important role of control strategies that individuals use to get desired outcomes or handle stressful situations and identifies sources of personal control enhancement that may strengthen the sense of personal control that is necessary for behaviour change (Thompson & Schlehofer, 2008).

Bryant's (1989) four-factor model of perceived control evaluate a person's perceived ability to avoid negative events (primary negative control); cope with negative events (secondary negative control); obtain positive events (primary positive control), and savour positive events (secondary positive control). This four-factor model explains an individual's self-evaluation of perceived control and distinguishes between perceived primary control (over events) and secondary control (feelings) separately in relation to positive and negative experiences (Bryant, 1989).

Thompson and Schlehofer (2008) suggest that perceived control consists of two dimensions, namely locus of control, referring to beliefs of either internal or external motivation and reinforcement; and self-efficacy, the belief of acquired personal ability to enact effective response. *Internal locus of control* is defined as the degree to which an individual expects important sources of reinforcement to be within his or her control and not influenced by external factors such as chance and fate (Carr, 2011). Internal locus of control refers to personal beliefs about the locus of reinforcements and whether individuals, in general, can obtain positive outcomes and goal achievement through their own action

(Bandura, 1997). *Self-efficacy* is viewed as an individual belief that one is capable of the specific behaviour required to produce the desired outcome in a given situation; it is regarded as a state of mind that varies from one specific task and situation to another (Kassin et al., 2014). Kassin et al. stated that self-efficacy guides our lives since we generally pursue courses of action which we believe will lead to desired outcomes and have little incentive to act in ways which we believe involve failure. The authors further held that the efficacy beliefs and expectations of certain consequences determine our behavioural performance that leads to specific outcomes.

According to Skinner et al. (2011), the core of control is the experience of exerting efforts to obtain desired outcomes. The perception that one has the ability, resource and opportunity to exercise personal control, has been a pervasive idea in psychological research and theory that involves overlapping constructs, such as self-determination, specifically the autonomy factor; self-regulation and self-control; self-efficacy, as briefly discussed above; internal locus of control, also indicated above; manageability as in a sense of coherence (Antonovsky, 1979); and mastery, as in the work of Jahoda (as cited in Compton, 2005) and Ryff (1995).

While personal control refers to the extent to which an individual has a sense of control over the outcome of a current perceived stressful situation, *self-determination* or *autonomy* refers to an individual's sense that one's actions and decisions are freely chosen and expressive of one's true self (Ryan & Deci, 2000).

It seems that the degree to which individuals exercise *self-control* over behaviour and emotions during stressful situations are influenced by internalised beliefs about the individual's ability to exercise self-control. To be in control of your life or to be able to change aspects of your life implies regulating and directing specific actions in order to obtain self-defined goals or outcomes (Baumgardner & Crothers, 2010). The ability that one has to change by controlling and regulating feelings, thoughts, emotions and actions to achieve personally significant outcomes and enhance well-being, is known *as self-regulation.* Self-control and self-regulation both involve the personal ability an individual has that enables him or her to achieve desired future goals (Baumgardner & Crothers, 2010).

Compton (2005) defines *mastery* as a successful adaptation to situational demands and expectations. To experience mastery, a person must feel that a situation can be controlled or changed and that he or she has the skills and ability to influence the situation (Full Frame

Initiative, FFI, 2013). Environmental mastery was deemed by both Johoda (as cited in Compton, 2005) and Ryff (1995) as essential for mental health and seen as a sense of competence and the ability to choose and influence situations and environments that are conducive to meet personal goals. An individual who feels little or no control over, or ability to change his or her life or situation, will likely have difficulty accomplishing goals and be facing challenges in various areas including relationships and work environment (FFI, 2013). Mastery can be seen as a motivator for perseverance and personal change.

Manageability is defined as "the extent to which an individual perceives that the resources at one's disposal are adequate to meet the demands posed by the various stimuli that bombard one" (Antonovsky, 1984, p. 118). Resources *at their disposal* may refer to resources under the individual's (teacher's) own control or resources offered by others, such as friends, family, colleagues, local education department, or anyone upon whom the teacher can count and trust. A teacher with a perceived sense of manageability will not feel that their life is *out of control;* instead he or she will, by their resources or with the support of legitimate others, feel that they are able to cope (Antonovsky, 1984).

A surprising element of perceived control is that some individuals seem able to maintain a degree of control even within circumstances that seem to leave little opportunity to achieve desired outcomes. Having a sense of control has adaptive effects and is associated with emotional well-being, reduced impact of stressors and increased the ability to cope with daily stress (Greenaway, Haslam, Cruwys, Branscombe, & Ysseldyk, 2015; Thompson & Schlehofer, 2008; Thompson & Spacapan, 1991).

A sense of perceived control is a valuable asset as it motivates individuals to take action and avoid stressful situations; it also encourages problem-solving and focuses attention to solutions; hence, preparing the individual for future successes (Thompson, 2011). A perceived lack of control can result in the development of anxiety disorders (Hogendoorn et al., 2014) and according to Thompson and Schlehofer (2008), individuals presenting low personal control are more likely to choose a passive approach, tending to develop the need to want others to act on behalf of them.

The personal control construct has been mostly researched and applied in the field of health psychology, especially regarding coping with health threats and adapting to a broad range of health problems (McAllister, Wood, Dunn, Shiloh & Todd, 2012). The role of PPC in the stress-illness/ wellness relationship has also been investigated with findings that feeling

in control can reduce the experience of stress during difficult times (Taylor, 2011) and that perceived personal control over stressful events is associated with emotional well-being, effective coping, behaviour change towards good health and a salutary lifestyle (Little, Snyder, & Wehmeyer, 2006). The lack of research in other fields, however, has prompted Thompson (2008) to call for research focusing on the practical, effective ways to enhance personal control in a variety of settings, such as schools, worksites and communities, according to the tenets of positive psychology.

In this study, PPC will be conceptualised and measured along the lines of Averill's (1973) and Bryant's (1989) models that have both been operationalised. Furthermore, in line with the arguments of Skinner and Zimmer-Gembeck (2011) about the powerful influence of a sense of perceived personal control on primary coping of individuals, but also on other variables in the stress-health and well-being relationship, this study will investigate the relationship of PPC with stress, coping and psychosocial well-being, the latter being discussed below.

Psychosocial Well-being

The teaching environment presents many social and emotional challenges that can have an impact on the overall well-being of teachers. *Well-being* entails physical, cognitive, emotional, social and spiritual wellness dimensions, which can be viewed as a broad state of positive health (Diener & Lucas, 1999). Furthermore, well-being is regarded as a dynamic process that includes all that is positive, desirable and good for a person, namely a meaningful social role, being happy and hopeful, living according to good values, effective coping, positive social relationships and support, and security (Diener & Lucas, 1999; Peterson, 2006). *Psychological well-being,* however, implies a comprehensive and more detailed concept of well-being (Linley & Joseph, 2004) and refers to how an individual engages with life and its various challenges (Keyes, Shmotkin, & Ryff, 2002), personal growth (Linley & Joseph, 2004) and the use of personal strengths and capabilities (Wissing & Van Eeden, 2002). The source of psychological well-being is intrinsic and personal (Linley & Joseph, 2004).

According to the Anderson and Mendenhall (2005) and Koen, Van Eeden, and Rothmann (2013) the term psychosocial refers to the integrated experience or connection between people's psychological aspects (thoughts, emotions and behaviour) and social experiences (relationships, traditions, culture). The term psychosocial, therefore, implies a

situation in which the person's psychological and social factors interact (Reber & Reber, 2001) and, thus, *psychosocial well-being* focusses on the location of psychological well-being, accentuating the "context of the individual within community and culture, rather than the individual in isolation" (Linley & Joseph, 2004, p.721). Seifert (2005) and Baumgardner and Crothers (2010) refer to psychosocial well-being as a dynamic concept that includes the individual's psychological, social and emotional dimensions together with health-related behaviour. The World Health Organization (2004) conceptualised psychosocial well-being as a state of well-being in which the individual recognises his or her abilities that enable him or her to cope with daily stressors, without influencing work efficiency and allowing him or her to contribute towards the community.

Based on the Keyes' (2005) model of complete mental health, with features of subjective well-being (Diener, 2000) integrated with the markers of high psychological well-being, as indicated by Ryff (1989) and with Keyes' (2002) concepts of social well-being, Baumgardner and Crothers (2010) describe psychosocial well-being as a global combination of emotional, psychological and social well-being. Keyes' (2004, 2005 & 2007) model of optimal mental health indicates that emotional well-being, psychological well-being and social well-being contribute in equal measures to the mental health of an individual and Keyes (1998, 2002, 2005), defines mental health as the presence of sufficient levels of emotional, psychological and social well-being and the absence of psychopathology. The Keyes model could also be seen as a model of psychosocial well-being, in which emotional well-being comprises individual happiness or subjective wellness, life satisfaction and mostly positive emotions. Psychological well-being includes features of well-being identified by Ryff (1989) as self-acceptance, personal growth, purpose in life, autonomy, positive relations with others and environmental mastery and social well-being involves social acceptance, social actualisation, social contribution, social coherence and social integration, as proposed by Keyes and Lopez (2002). The Keyes model of complete mental health is considered as the most inclusive, comprehensive and multi-faceted framework for understanding psychosocial well-being (Keyes, 2002, 2013; Keyes, Wissing, Potgieter, Temane, Kruger, & Van Rooy, 2008). Within this model, Keyes refers to the positive end of the well-being spectrum as positive mental health or flourishing and the negative pole of the continuum as low mental health or languishing (Joshanloo, Wissing, Khumalo, & Lamers, 2013). Positive mental health is conceptualised by a combination of hedonic or pleasure related (emotional well-being) and eudaimonic- or actualisation-related (social and psychological well-being)

dimensions (Kok, 2013). Mental illness and well-being are not the opposite ends of a single continuum, but fit into the two-continuum multilateral model of well-being as developed by Keyes (2009, 2011, 2013), in which emotional well-being indicates states of positive feeling; whereas, psychological and social well-being, in turn, indicate positive functioning.

This model of positive mental health has been applied by both Keyes (2005) and Rothmann (2013) in the workplace, where better work-related outcomes were found among those who were flourishing. Positive mental health is therefore associated with better general and work functioning, with those individuals who are flourishing reporting lower absenteeism from work, high morale, job satisfaction, engagement and other indicators (Keyes, 2002). However, the stress and high work demands experienced by teachers have been found to impact negatively on their psychosocial well-being (Kittel & Leynen, 2003).

In this study, psychosocial well-being is conceptualised as the manifestation of emotional, psychological and social well-being using the Keyes model (2009, 2011), as well as the Rothmann (2013) adapted version of the Keyes model, namely flourishing at work. The relationships between psychosocial well-being, stress, perceived sense of control and coping strategies were investigated. As mentioned before and in line with the work of Keyes (2009), Litt et al. (2011) and Skinner et al. (2011), psychosocial well-being of teachers was assessed on two occasions (with the other variables) to examine its variability over time.

Intention to Leave the Teaching Profession

South Africa is currently experiencing an alarming situation where teachers are resigning from the profession in droves (Marais, 2016). In 2014, about 14 000 teachers resigned, of which nearly 4 600 teachers resigned from teaching in November 2014 (Nkosi, 2015). Approximately 410 000 South African teachers are employed by the Department of Basic Education, placed across nine provinces that are responsible for educating more than 12.9 million learners (Mhlanga & Maarten, 2018).

The unstable nature of the South African teaching profession demands from teachers to cope effectively and adequately with ongoing changes, demands and challenges, causing them to experience continuous pressure and stress (Jackson & Rothmann, 2005). Uncertainties experienced, an inability to effectively cope and adapt to changes and challenges, together with ongoing transformation and transition within the South African education system, can contribute to unproductive outcomes and may have detrimental

consequences on teaching and learning and for teachers themselves (Chan, 2006; Steyn & Kamper, 2006).

In a work context, such as the one for teachers depicted above, one can expect that apart from teachers that have left the teaching profession, many have an intention to leave. Intention to leave refers to a teacher's conscious and intentional frame of mind to part ways with the educational institution where they are employed (Tett & Meyer, 1993). Kahumuza and Schlechter (2008) viewed intention to leave as the strength of an employee's viewpoint that he or she no longer wants to work for his or her organisation. Park and Kim (2009) added that intention to leave the profession is considered as the final cognitive decision making process, whereby employees/teachers actively search for alternative employment opportunities.

Although a teacher's intention to leave may not translate into actual behaviour, intention to leave a profession is regarded as an antecedent to actual career change (Griffeth, Hom, & Gaertner, 2000). According to Darling-Hammond (2010), teachers typically leave a school for two main reasons: to leave the profession (attrition) or to leave one school for another (migration within the profession). Work stress was found to be one of the clearest predictors of teacher attrition (Borman & Dowling, 2008; Brownell, Smith, McNellis, & Miller, 1997). Teachers' stress and the great number of teachers exiting from the educational context are alarming, threatening quality education and subsequent student performance (Steinhardt, Smith Jaggars, Faulk, & Gloria, 2011).

Research Question and Objectives

Based on the above exposition of the literature about teacher stress in the South African teaching context, as well as positive psychological variables, such as perceived personal control, adaptive coping strategies and psychosocial well-being that may have a salutary influence on teachers' stress levels, the research questions that came to mind was: Would there be beneficial or any other relationships between teachers' perceived stress levels, their coping strategies, their perceived sense of personal control, psychosocial well-being and their flourishing at work? Would their levels of stress, coping strategy, perceived personal control, psychosocial well-being and flourishing at work show significant variations after an interval of four months and would the variables mentioned predict teachers' intention to leave the profession?

Research objectives were to:

- Study the existing research findings in literature pertaining to the stated variables;
- Determine by means of structural equation modelling the statistical relationships between the stated variables at two occasions, four months apart;
- Determine direct and indirect effects between the variables;
- Identify latent profile (LPA) groups in participants for perceived stress and perceived personal control;
- Determine whether profile memberships could be depicted by or correlate with participants' performance on the other variables used in the study;
- Investigate whether variables used in this study would influence the intention to leave the profession.
- Determine whether a four months' time interval had an effect on participants' scores on the variables measured.

The research design and methods will be explicated next.

Research Methodology

Research methodology is concerned with how the research design is implemented and how the research is carried out. The methodology specifies when and how often to collect data; construction of data collection measures; identification of the sample or test population; choice of strategy; selection of statistical tools; and presentation of findings (Creswell, 2009; Y520, nd). In this study, a literature review as well as empirical research were conducted.

Literature study

The literature study will conceptualise the following concepts, their antecedents, consequences and possible relationships: stress, coping and coping strategies, perceived personal control, flourishing at work, psychosocial well-being and intention to leave.

Empirical study

The research design, methodology and procedures of this quantitative study, will be described below.

Research design

The research design was a pre-experimental research design with a combination of cross sectional and time series one group designs, which means that a cross sectional survey was

done with the same group of participants on two occasions, with an interval of four months, after which the same variables were measured. The research methods were primarily quantitative in nature.

Characteristics of the research design components

Pre-experimental research is used when there are variables that cannot be ethically or practically manipulated, including categorical variables, such as gender, ethnicity, personality and quantitative variables, such as age, intelligence and individual traits (Y520, nd). Pre-experimental research lacks the manipulation of an independent variable and cannot be used as the basis for cause and effect relationships (Thyer, 2012). The researcher investigates conditions that naturally occur or that have already occurred. This enables the researcher to study how variables are related (Y520, nd).

*A cross-sectional researc*h design is of value to researchers for exploratory research purposes. Cross-sectional research designs cannot ensure the equivalence of groups as it involves intact and existing groups and not the random selection of subjects and/or assignments to groups (Y520, nd). The advantages surrounding this type of research design includes the collection of data on variables, attitudes and behaviours. It enables the researcher to gather data from a large number of participants. A cross-sectional research design, however, is static, time bound and it is difficult to rule out rival hypotheses (Y520, nd).

The one group pre- and post-test research designs are longitudinal designs where data are repeatedly collected from the same group of participants over a period of time (Thyer, 2012; Y520, nd). The researcher is able to measure changes in variables that occur between the pre- and post-test. The changes that possibly might occur can be due to history, maturation, instrument decay, data collection characteristics and/or bias, testing, statistical regression, attitude of participants and problems with implementation (Y520, nd). In this study, the measurement of variables with the same group was done twice, four months apart.

A time series research design involves the collection of data on the same variables at regular intervals (weekly, monthly, etc.) (Y520, nd). This design is especially useful for the establishment of a baseline measure that is able to describe the changes that occur over time. This design will allow the researcher to keep track of specific tendencies and estimate future short terms trends. Data are mostly presented in the form of graphs or charts where the horizontal (x) axis is divided into time interval, whilst the vertical (y) axis indicates the dependent variable values (Y520, nd). The advantages of a time series research design

include easy data collection of which the results are easily interpreted and presented (Thyer, 2012; Y520, nd). The disadvantages of time series research designs are the possibility of change with regard to the method of data collection (Thyer, 2012; Y520, nd). It is also more difficult to indicate multiple variables at a time and is dependent on qualitative research to explain fluctuation. This design assumes that present tendencies will continue unchanged.

Participants in and procedure of the study

For the purpose of this study, approximately 200 teachers from eight schools that included primary, secondary and special education schools, under jurisdiction of the Gauteng Department of Education in the Vereeniging, Sedibeng East District in the Gauteng province, South Africa, were approached for voluntary and partially anonymous participation in the study. Further inclusion criteria were that the teachers gave written consent, mark the questionnaires with the last four digits of their cell phone number for questionnaire identification purposes and were language proficient in English to answer the questions posed in the questionnaires.

After receipt of the Gauteng Department of Education's permission to conduct the research, the principal of each school, together with the School Governing Body, were approached through letters and personal contact, requesting their permission to conduct the study in their schools. After receipt thereof, the researcher, together with a research assistant, visited the schools at a convenient time, as agreed with the principal, to meet the teachers and to give them clear information about the nature of the research and their rights as participants therein. Consent letters that clearly described the nature of the research were made available and interested teachers could sign these within four days and return them to the research assistant at an agreed-upon time and place. Thereafter, booklets with the questionnaires to be completed were given to consenting participants and after two weeks, the questionnaire booklet was collected by the researcher. Teachers who participated in the research were provided with the researcher's contact details where she was available to assist them in any way possible. Where practically possible and teachers at a school could be assembled in a group, the researcher could personally administer the questionnaires. In the initial meeting and the original consent letters, the necessity of doing a second measurement in four months' time was stated and teachers' consent obtained for such a follow up assessment.

Data collection

Each participant (teacher) received a booklet in English, containing a biographical questionnaire and the following validated self-report questionnaires:

A biographic questionnaire (BQ) developed 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 presently teaching.

The Perceived Stress Scale (PSS) of Cohen and Williamson (1988) 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 ten-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 scale also includes a number of questions about current levels of experienced stress. 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 (Cohen & Williamson, 1988). Participants respond by making use of a five-point Likert scale ranging from 0=never to 4=very often. Higher scores indicate more perceived stress. Evidence for validity shows that higher PSS scores are associated with greater vulnerability to stressful life-event elicited depressive symptoms (Cohen & Williamson, 1988). The Cronbach's alpha coefficient for the PSSs internal reliability is .75 (Cohen, Kamarck, & Mermelstein, 1983). The PSS has been used in a South African study by Hamad, Fernald, Karlan and Zinman (2009), with findings that adults in South Africa demonstrate rates of perceived stress at or above levels elsewhere in the developing world. Scores range from 0 to 40 and the test had a Cronbach's alpha of .72 (Hamad et al., 2009, p.8). The rationale for using the perceived stress scale was to determine the teachers' global perceptions of perceived stress and although it can be generalised to any situation that the participant might have encountered, teachers were requested to focus on their job-related experiences over a period of about one month.

The Perceived Personal Control (PPC) questionnaire of Berkenstadt, Shiloh, Barkai, Bat-Miriam-Katzelson and Goldman (1999) developed for the measurement of an individual's sense of perceived personal control. Based on the work of Averill (1973), Taylor (1983) and Thompson et al. (1993), three separate control dimensions were distinguished and incorporated in the questionnaire, namely behavioural control (the availability of an

influential response), cognitive control, (the processing of information to make a potentially threatening situation less stressful) and decisional control (the opportunity to choose among various courses of action) (Smets, Pieterse, Aalfs, Ausems, & Van Dulmen, 2006). The PPC asks respondents to indicate their subjective perception of how much control they believe to have over a problem using nine items with a three-point response scale (0=do not agree, 1=somewhat agree, 2=completely agree). A total score is calculated by adding the item scores (ranging from 0-2) divided by the total number of items. Higher scores indicate a respondents' greater sense of perceived personal control. Measuring the effect and/or influence of perceived personal control on the outcome of genetic counselling, Berkenstadt et al. (1999) found, that the reliability of the scale was good before counselling, where the Cronbach's alpha of the total scale was .83 and also after counselling where it was .86, thus validating the structure of the PPC concept. Smets et al. (2006) aimed to assess the psychometric properties of the PPC further. Data were used from two samples and Cronbach's alpha coefficient ranging from .79 to .81were reported. McAllister, Wood, Dunn, Shiloh and Todd (2012) validated the PPC in an UK population and found internal consistency of .83, good convergent validity and sensitivity to change of the scale. This scale has not been used in South African research.

The Brief COPE inventory (Carver, 1997) is a self-report questionnaire used to determine and assess a broad range of coping responses of educators' when dealing with perceived daily stress. The Brief COPE inventory consists of 28 items measuring 14 theoretically identified coping responses, with two items each that deal with ways people use to cope with the stress they are experiencing in their lives. The items measure the extent to which the participant uses a specific coping strategy (active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioural disengagement, and self-blame) as well as how much or how frequently they engage in the specific coping strategy on a four-point Likert scale (1 = not at all; 4 = very much). The Brief COPE scale can be sub-divided into three main scales, namely positive reframing, venting and self-distraction (Carver, 1997). Despite the fact that the scales have only two items each, their reliability all meet or exceed the value of .70, regarded as minimally acceptable. 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 coefficients for reliability in this study were between .86 and .92. The rationale for using this

scale is its psychometric quality and conciseness. The Brief COPE scale can be used to assess teachers' responses known to be adaptive or less so in coping, by means of measuring for example problem solving, positive reframing and the use of instrumental or social support, denial, etc.

Mental Health Continuum – Short Form for adults (MHC-SF) (Keyes, 2007; 2011; 2013). The (MHC-SF) is based on the original 39-item LF and both were developed with the specific purpose of measuring emotional, social and psychological well-being in the upper range of the mental health continuum (Keyes, 2011; 2013). The MHC-SF is a 14-item self-report measure of positive mental health, which places individuals' level of well-being along a continuum from languishing to flourishing. The three subscales, emotional well-being (three items), psychological well-being (six items) and social well-being (five items) constitute a multilateral model of well-being. Emotional well-being (EWB) is defined in terms of an individual's subjective well-being, including satisfaction with life, positive and negative affect. The level of self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy experienced by an individual is included in the psychological well-being (PWB) subscale. Social well-being (SWB) measure issues related to social integration, social contribution, social coherence, social actualisation and social acceptance. The frequency of emotional, psychological and social well-being during the previous month is rated on a six-point Likert scale (0=never and 5=every day). The MHC-SF has produced good internal consistency coefficients of more than .80 and high discriminant validity (Keyes, 2005, 2006; Keyes et al., 2008). Keyes et al. (2008) found an internal reliability score of .74 for the total MHC-SF in a validation study done with Setswana-speaking South Africans, whilst a study conducted by Koen (2010) with professional nurses found an internal reliability score with Cronbach's alpha coefficients of .83. Wissing et al. (2008) reports Cronbach alphas of .75 to .90 for the MHC-SF in four different South African samples. The MHC-SF has shown excellent internal consistency (> .80) and discriminant validity in adults South Africa (Keyes, 2006). The three-factor structure of the MHC- SF; emotional, psychological and social well-being has been confirmed in representative samples in South Africa (Keyes et al., 2008).

The Flourishing at Work Scale – Short Form (FAWS-SF) (Rautenbach & Rothmann, 2015), is a 21-item scale based on the original 39 item scale of the authors and measures expressions of emotional, psychological and social well-being at work. Respondents indicate the frequency with which they experienced specific aspects of the three dimensions of well-being

during the past month, on a six-point-scale ranging from 1=never to 6=every day. Such a response scale allows for the categorisation of levels of well-being corresponding to the three classes used by Keyes (2009, 2011) to assess positive mental health. To flourish, a person must experience every day/ almost every day, at least one of the three aspects of emotional well-being and at least eight of the 14 aspects of positive functioning or psychosocial well-being. Languishing would be indicated by never /once or twice, experiencing the well-being features and moderate work well-being would mean neither flourishing nor languishing. Rautenbach and Rothmann (2015) reported internal consistencies of .82 to .90, indicating acceptable reliability of the FAWS-SF. The FAWS-SF was used with N=779 participants in an alcoholic beverage company in South Africa. The reason for including the FAWS-SF in this study is the fact that it investigates the psychosocial well-being of teachers in specifically their work context, whereas the other scales report on the variables measured more within an individual context. The FAWS-SF was also developed and validated in and for a South African work context.

The Workplace Evaluation Questionnaire (WEQ) is a slightly adapted version of the Turnover Intention Scale (TIS) of Sjöberg and Sverke (2000). This scale has three items that measure the intention to leave a current occupation. The authors reported a Cronbach's alpha coefficient of .83 and the TIS was used by Diedericks (2012) in South African research with participants from the technology industry. The purpose for including the WEQ is in line with the findings of Naidoo et al. (2013) and Van Dick and Wagner (2001) about the high levels of intention to leave the profession by teachers in South Africa.

The PSS, COPE and TIS/WEQ are available for research in the public domain and the MHC-SF is, by agreement with its author, available for research in South Africa. For the PPC and FAWS-SF, permission for use was obtained from the authors.

Data analysis

Two hundred and thirty-six questionnaire booklets were handed out and N=209 could be used for analysis due to errors and incompleteness of the others. Data from the questionnaires were captured in SPSS 25.0 by the researcher. Following this, the data set was screened for errors and outliers following the procedure outlined in Field (2005). Once this process was completed, descriptive statistics, such as the means, mode, variance, standard deviation, range, skewness and kurtosis were calculated for all items, scales and subscales.

Statistical analysis was conducted with SPSS 25.0 (IBM Inc., 2018) and Mplus 8.3 (Muthén & Muthén, 1998-2019). Point estimates of scale reliability (rather than alpha coefficients) were computed through confirmatory factor analysis (CFA) (see Raykov, 2009). Cut-off values for scale reliability of .70 (Raykov, 2009) were used and Pearson correlations were employed to determine correlations among the variables. Statistical significance was established at 99 percent ($p \leq .01$) and practical significance was established at .30 with a medium effect and .50 with a large effect (Cohen, 1988).

The data were analysed by performing latent profile analysis (LPA). The Lo-Mendell-Rubin likelihood ratio test (LMR) (Lo, Mendell, & Rubin, 2001) and the significant bootstrap likelihood ratio test (BLRT) were used for assessing the statistical fit of two models that differed by one class and provided a *p*-value indicating the best-fitting model. The lower sample size-adjusted Bayesian information criterion (BIC) was also employed, as it is a good indicator of the best model fit (Nylund, Asparouhov, & Muthén, 2007). Lastly, entropy was used to provide an index of model classification quality. Values greater than .80 indicated adequate classification quality and values closer to 1.0 indicated better classification quality (Jung & Wickrama, 2008).

Ethical Principles for the Study

To ensure that this study was conducted in an ethical manner, international ethical principles, such as those stated in the Helsinki declaration (Burns & Grove, 2005) were used. These principles acted as guidelines ensuring that the rights of participants were protected at all times, namely confidentiality and anonymity where possible, respect for the dignity of persons and non-maleficence (Terre Blanche, Durrheim & Painter, 2006). Research participants were treated with respect, fairness and equity during all stages and caution was taken to ensure that no harm befalls research participants as a direct or indirect consequence of the research. Should any person involved, experience emotional discomfort due to the nature of items posed in the questionnaires, a single session of counselling, free of charge, was arranged with a professional who had agreed to render such a service.

No discrimination based on race, gender or background took place. It was required of participants to give voluntary written consent prior to participation in the study for the data obtained from them on the two occasions. They were clearly informed about the nature of the research and their rights as participants. All such rights were be upheld in this research, including their right to withdraw at any stage. The participants were informed that all the

information they provide would be treated with utmost confidentiality and that the information would only be used strictly for research purposes. All information obtained for the purpose of this research project and shared with third parties, will be done with aggregate results in which no individual can be identified. However, since two sets of data were obtained from them, they were requested, to mark the questionnaires with the last four digits of their cell phone number, by which their sets of questionnaires could be matched.

The participants were not paid for participating in the research. Feedback on their individual was provided to those who requested so from the researcher by e-mailing her in this regard.

The Humanities and Health Research Ethics Committee (HHREC) of the North-West University (NWU-HS-2017-0026) granted ethical approval for the study. All criteria required for ethics research as set out by the HHREC and other ethics policies and guidelines, were strictly adhered to in this study.

In addition to the guidelines stated above, this research was conducted under the supervision of two qualified promoters.

Proposed Structure of the Thesis

Chapter 1: Literature and methodological framework of the study.

Chapter 2 (Manuscript 1): Perceived stress and coping of teachers: A latent profile analysis

Chapter 3 (Manuscript 2): Teachers' perceived stress, coping strategies, mental health at work and the intention to leave the profession.

Chapter 4 (Manuscript 3): Teachers' perceived stress, mental health, perceived personal control: the effects thereof on flourishing at work.

Chapter 5: Conclusions, limitations and recommendations.

References

Aldwin, C. (2011). Stress and coping across the lifespan. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 15–34). Oxford, United Kingdom: Oxford University Press.

Anderson, A., & Mendenhall, M. (2005). Inter-agency network for education in emergencies. *Forced Migration Review*, *22*(22), 8–10.

Antonovsky, A. (1979). *Health, stress, and coping*. San Francisco, CA: Jossey-Bass.

Antonovsky, A. (1984). The sense of coherence as a determinant in health. In J. D. Matarazzo (Ed.), *Behavioral health: A handbook of health enhancement and disease prevention.* (pp. 114–129). New York, NY: John Wiley.

Aspinwall, L. G. (2011). Future-oriented thinking, proactive coping, and the management of potential threats to health and well-being. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 334–365). New York, NY: Oxford University Press.

Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin*, *80*(4), 286–303.

Bach, M. (2000). *Stress, coping, social support and psychological and physical well-being in a group of academics* (Master's dissertation). North-West University, Potchefstroom, South Africa.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: Freeman.

Baumgardner, S. R., & Crothers M. K. (2010). Positive psychology. Upper Saddle River, N.J.: Prentice Hall.

Berkenstadt, M., Shiloh, S., Barkai, G., Katznelson, M. B. M., & Goldman, B. (1999). Perceived Personal Control (PPC): A new concept in measuring outcome of genetic counseling. *American Journal of Medical Genetics*, *82*, 53–59.

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research, 78*(3), 367–409.

Brown, S. P., Westbrook, R. A., & Challagalla, G. (2005). Good cope, bad cope: adaptive and maladaptive coping strategies following a critical negative work event. *Journal of Applied Psychology*, *90*(4), 792–798.

Brownell, M. T., Smith, S. W., McNellis, J. R., & Miller, M. D. (1997). Attrition in special education: Why teachers leave the classroom and where they go. *Exceptionality*, *7*(3), 143–155.

Bryant, F. B. (1989). A four- factor model of perceived control: Avoiding, coping, obtaining, and savoring. *Journal of Personality*, *57*(4), 773–797.

Burns, N., & Grove, S. K. (2005). *The practice of nursing research: Conduct, critique, and utilization*. St. Louis, Mo: Elsevier/Saunders.

Carr, A. (2011). *Positive psychology: The science of happiness and human strengths* (2nd ed.). New York, NY: Brunner-Routledge.

Carver, C. S., & Scheier, M. F. (1999). Themes and issues in the self-regulation of behavior. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition* (pp. 1–105). Mahwah NJ: Erlbaum.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, *4*(1), 92–100.

Chaaban, Y. & Du, X. (2017). Novice teachers' job satisfaction and coping strategies: Overcoming contextual challenges at Qatari government schools. *Teaching and Teacher Education, 67*, 340–350.

Chan, D. W. (2006). Emotional intelligence and components of burnout among Chinese secondary school teachers in Hong Kong. *Teaching and Teacher Education, 22*(8), 1042–1054.

Chang, M. (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review*, *21*(3), 193–219.

Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology, 11*(3), 421–437.

Chung, E. (2001). *Pocket guide to stress testing*. New York, NY: Blackwell Science.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Orlando, FL: Academic Press.

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapam & S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology* (pp. 31–67). Newbury Park, CA: Sage.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396.

Compas, B. E. (2009). Coping, regulation, and development during childhood and adolescence. *New Directions for Child and Adolescent Development*, *2009*(124), 87–99.

Compton, W. (2005). *Introduction to psychology*. Belmont, CA: Thomson Wadsworth.

Creswell, J. W. (2009) *Research design: Qualitative, quantitative and mixed approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Cronje, A. (2011). The relationship between coping strategies and depression in an African context (Doctoral dissertation, North-West University). Retrieved from https://repository.nwu.ac.za/handle/10394/6532

Crum, A., & Lyddy, C. (2014). De-stressing stress: The power of mindsets and the art of stressing mindfully. In C. Ngnoumen, A. Ie & E. Langer. (Eds.), *Handbook of mindfulness* (pp. 948–963). Hoboken, NJ: Wiley.

Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of Teacher Education*, *61*(1-2), 35–47.

Diedericks, E. (2012). *Flourishing of employees in the information technology industry in South Africa*. (Doctoral thesis). North-West University, Vaal Triangle, Vanderbijlpark, South Africa.

Diener, E. (2000). Subjective well-being: The science of happiness and proposal for a national index. *American Psychologist*, *55*(1), 34–43.

Diener, E., & Lucas, R. E. (1999). Personality and subjective well-being. In D Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213–229). New York, NY: Russel Sage Foundation.

Donnelly, C. L., & Amaya-Jackson, L. (2002). Post-traumatic stress disorder in children and adolescents: epidemiology, diagnosis and treatment options. *Paediatric drugs*, *4*(3), 159–170.

Dougall, A.L. & Baum, A. (2012). Stress, health and illness. In Baum, A., Revenson, T.A., Singer, J. (Eds.), *Handbook of health psychology* (2nd ed.) (pp. 53–78). New York, NY: Psychology Press, Taylor & Francis Group.

Ebersöhn, L. & Eloff, I. (2002). The black, white and grey of rainbow children coping with HIV/AIDS. *Perspectives in Education*, *20*(2), 77–86.

Ebersöhn, L. (2007). Voicing perceptions of risk and protective factors in coping in a HIV&AIDS landscapes reflecting on capacity for adaptiveness. *Gifted Education International*, *23*(2), 149–159.

Endler, N. S., & Parker, J. D. (2000). *Coping with health injuries and problems scale (CHIP): Manual*. Toronto, Canada: Multi-Health Systems.

Engelbrecht, P., Swart, E., & Eloff, I. (2001). Stress and coping skills of teachers with a learner with Down's syndrome in inclusive classrooms. *South African Journal of Education*, *21*(4), 256–259.

Ferreira, R. & Ebersöhn, L. (2012). *Partnering for resilience.* Pretoria, South Africa: Van Schaik.

Ferreira, R. (2013). Asset-based coping as one way of dealing with vulnerability. In M. P. Wissing. (Ed.), *Well-being research in South Africa* (pp. 355–374). Dordrecht: Springer Publishers.

Field, A. (2005). *Discovering statistics using SPSS.* London, United Kingdom: SAGE.

Fishman, E. J. (2014). With great control comes great responsibility: The relationship between perceived academic control, student responsibility, and self- regulation. *British Journal of Educational Psychology*, *84*(4), 685–702.

Folkman, S. (1984). Personal control and stress and coping processes: a theoretical analysis. *Journal of Personality and Social Psychology*, *46*(4), 839–852.

Folkman, S. (2011). *The Oxford handbook of stress, health, and coping*. Oxford: Oxford University Press.

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*, 74–745.

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*, *50*(3), 571–579.

Frazier, L. D. (2002). Stability and change in patterns of coping with Parkinson's disease. *The International Journal of Aging and Human Development*, *55*(3), 207–231.

Frazier, P., Steward, J., & Mortensen, H. (2004). Perceived control and adjustment to trauma: A comparison across events. *Journal of Social and Clinical Psychology*, *23*(3), 303–324.

Full Frame Initiative (2013). *The five domains of wellbeing*. Retrieved from https://fullframeinitiative.org/resources/about-the-full-frame-approach-and-five-domains

Greenaway, K.H., Haslam, S.A., Cruwys, T., Branscombe, N.R., Ysseldyk, R., & Heldreth, C. (2015). From "we" to "me": Group identification enhances perceived personal control with consequences for health and well-being. *Journal of Personality and Social Psychology*, *109*(1), 53–74.

Greenberg, J., & Baron, R. A. (2003). *Behavior in organizations: Understanding and managing the human side of work* (8th ed.). Upper Saddle River, NJ: Pearson Education.

Grenville-Cleave, B., & Boniwell, I. (2012). Surviving or thriving: Do teachers have lower perceived control and well-being than other professions? *Management in Education*, *26*(1), 3–5.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of management*, *26*(3), 463–488.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health*, *62*(6), 538–544.

Heppner, P. P., & Lee, D. G. (2009). Problem solving appraisal and psychological adjustment. In S. J. Lopez (Eds.), *Handbook of positive psychology* (2nd ed.) (pp. 288–298). New York: Oxford University Press.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524.

Hobfoll, S. E. (2011). Conservation of resources theory: Its implication for stress, health, and resilience. In S. Folkman (Ed.), *Oxford library of psychology. The Oxford handbook of stress, health, and coping* (pp. 127–147). New York, NY: Oxford University Press.

Hogendoorn, S. M., Prins, P. J., Boer, F., Vervoort, L., Wolters, L. H., Moorlag, H., & De Haan, E. (2014). Mediators of cognitive behavioral therapy for anxiety-disordered children and adolescents: Cognition, perceived control, and coping. *Journal of Clinical Child and Adolescent Psychology*, *43*(3), 486–500.

Holahan, C. J., & Moos, R. H. (1990). Life stressors, resistance factors, and improved psychological functioning: An extension of the stress resistance paradigm. *Journal of Personality and Social Psychology*, *58*(5), 909–917.

Holahan, C. J., & Moos, R. H. (1994). Life stressors and mental health: Advances in conceptualizing stress resistance. In W. R. Avinson & I. H. Godlib (Eds.), *Stress and mental health*: *Contemporary issues and prospects for the future*, (pp. 213–238). New York, NY: Plenum.

IBM Corp. (2018). *IBM SPSS statistics: Version 25*. Armonk, NY: IBM Corp.

IBM Corporation. (2015). IBM: SPSS statistics for Windows: Version 23.0. Armonk, NY: IBM Corp.

Ironson, G., Kremer, H., (2011). Coping, spirituality and health in HIV. In Folkman, S., (Ed.), *The Oxford handbook of stress, health, and coping* (pp.289-318). New York, NY: Oxford University Press.

Jackson, L. T. B. (2004). *Burnout and engagement of teachers in the North West Province* (Unpublished doctoral thesis). North-West University, Potchefstroom, South Africa.

Jackson, L. T. B., & Rothmann, S. (2005). Work-related well-being of educators in a district of the North West Province. *Perspectives in Education*, *23*(3), 107–122.

Jackson, L. T., Rothmann, S., & Van de Vijver, F. J. (2006). A model of work- related well-being for educators in South Africa. *Stress and Health*, *22*(4), 263–274.

Joshanloo, M., Wissing, M. P., Khumalo, I. P., & Lamers, S. M. (2013). Measurement invariance of the Mental Health Continuum-Short Form (MHC-SF) across three cultural groups. *Personality and Individual Differences*, *55*(7), 755–759.

Jung, T., & Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass, 2*(1), 302–317.

Kahumuza, J., & Schlechter, A. F. (2008). Examining the direct and some mediated relationships between perceived support and intention to quit. *Management Dynamics: Journal of the Southern African Institute for Management Scientists*, *17*(3), 2–19.

Kassin, S., Fein, S., & Markus, H. (2014). *Social Psychology* (9th ed.). Belmont, CA: Wadsworth Cengage Learning.

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, *61*(2), 121–140.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, *43*(2), 207–222.

Keyes, C. L. M. (2004). The nexus of cardiovascular disease and depression revisited: The complete mental health perspective and the moderating role of age and gender. *Aging and Mental Health, 8*(3), 266–274.

Keyes, C. L. M. (2005). Chronic physical conditions and aging: Is mental health a potential protective factor? *Aging International*, *30*(1), 88–104.

Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing. A complementary strategy for improving national mental health. *American Psychologist, 62*(2) 95–108.

Keyes, C. L. M. (2009). The nature and importance of positive mental health in American adolescents. In R. Gilman, E. S. Huebner, & M. J. Furlong (eds.), *Handbook of positive psychology in school*, (pp. 9–23). New York, NY: Routledge.

Keyes, C. L. M. (2013). Protecting and promoting positive mental health: Early and often throughout the lifespan. In C. L. M. Keyes (Ed.), *Mental well-being: International contributions to the study of positive mental health* (pp. 3–28). Dordrecht, The Netherlands: Springer.

Keyes, C. L. M., & Lopez, S. J. (2002). Toward a science of mental health: Positive directions in diagnosis and interventions. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 45–59). New York, NY: Oxford University Press.

Keyes, C. L. M., Wissing, M. P., Potgieter, J. P., Temane, Q. M., Kruger, A., & Van Rooy, S. (2008). Evaluation of the mental health continuum short form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology and Psychotherapy, 15*(3) 181–192.

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of Personality and Social Psychology*, *82*(6), 1007–1022.

Kittel, F., & Leynen, F. (2003). A study of work stressors and wellness/health outcomes among Belgian school teachers. *Psychology and Health*, *18*(4), 501–510.

Koen, D. (2010). *Resilience in professional nurses*. (Doctoral Thesis). North-West University, Vanderbijlpark, South Africa.

Koen, V., Van Eeden, C., & Rothmann, S. (2013). A model for psychosocial well-being of families in a South African context. *Journal of Psychology in Africa, 23*(1), 155–164.

Kok, I. (2013). *Psychological well-being, race and school setting: A comparative study among South African teachers in the SABPA study* (Doctoral thesis). North-West University, Potchefstroom, South Africa.

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, *77*(1), 229–243.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27–35. University of York: UK.

Lam, B. T., Alvarado, D., & Lee, W. (2014). Collective self-esteem and coping strategies among Vietnamese American adolescents. *Journal of Human Behavior in the Social Environment*, *24*(4), 438–447.

Lazarus, R. S. (1974). Psychological stress and coping in adaptation and illness. *The International Journal of Psychiatry in Medicine*, *5*(4), 321–333.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Linley, A., & Joseph, S. (2004). Toward a theoretical foundation for positive psychology in practice. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 713–731). Englewood Cliffs, NJ: Wiley.

Litt, M. D., Tennen, H., & Affleck, G. (2011). The dynamics of stress, coping and health: Assessing stress and coping processes in near real time. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 387–403). New York, NY: Oxford University Press.

Little, T. D., Snyder, C. R., & Wehmeyer, M. (2006). The agentic self: On the nature and origins of personal agency across the life span. In D.K. Mroczek & T.D. Little (Eds.). *Handbook of personality development* (pp. 61–79). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Liu, Y., & Yussen, S. (2005). A comparison of perceived control beliefs between Chinese and American students. *International Journal of Behavioral Development, 29*(1), 14–23.

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*(3), 767–778.

Louw, G. J., & Viviers, A. (2010). An evaluation of a psychosocial stress and coping model in the police work context. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 36*(1), 1–11.

Lyubomirsky, S. (2011). Hedonic adaptation to positive and negative experiences. In S. Folkman (Ed.), *Oxford handbook of stress, health, and coping* (pp. 200–224). New York, NY: Oxford University Press.

Marais, A. (2016, Maart 3). 5000 onnies waai in 2015. *Beeld,* p 13.

Mayordomo-Rodríguez, T., Meléndez-Moral, J. C., Viguer-Segui, P., & Sales-Galán, A. (2015). Coping strategies as predictors of well-being in youth adult. *Social Indicators Research, 122*(2), 479–489.

McAllister, M., Wood, A. M., Dunn, G., Shiloh, S., & Todd, C. (2012). The perceived personal control (PPC) questionnaire: Reliability and validity in a sample from the United Kingdom. *American Journal of Medical Genetics Part A, 158*(2), 367–372.

Mearns, J., & Cain, J. E. (2003). Relationships between teachers' occupational stress and their burnout and distress: Roles of coping and negative mood regulation expectancies. *Anxiety, Stress & Coping: An International Journal, 16*(1), 71–82.

Meehan, S., Peirson. A. & Fridjhon, P. (2007). Suicide ideation in adolescent South Africans: The role of gender and coping strategies. *South African Journal of Psychology*, *37*(3), 552–575.

Mhlanga, E., & Maarten, T. (2018). *Basic Education on increased number of qualified teachers in education system.* Retrieved from https://www.gov.za/speeches/pubilc-education-system-1-oct-2018-0000.

Monyatsi, P., Steyn, T., & Kamper, G. (2006). Teacher perceptions of the effectiveness of teacher appraisal in Botswana. *South African Journal of Education, 26*(3), 427–441.

Moorhead, G. & Griffin, R. (2004). *Organisational Behaviour: Managing People and Organisations* (7th ed.). Boston, MA: Houghton Mifflin.

Moos, R.H. & Schaefer, J.A. (1993). Coping resources and processes: Current concepts and measures. In: L. Goldberger, & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed.) (pp. 234–257). New York, NY: The Free Press.

Moss, C. A. (2008). Power of the five elements: path to healthy aging and stress resistance. Retrieved from http://northatindiabooks, wordpress.com

Muthén, L. K., & Muthén, B. O. (1998-2019). *Mplus user's guide: 8.* Los Angeles, CA: Muthén & Muthén.

Naidoo, K., Botha, C. J., & Bisschoff, C. A. (2013). Causes of stress in public schools and its impact on work performance of educators. *Journal of Social Sciences, 34*(2), 177–190.

Nkosi, B. (2015, April 8). Motshekga blocks re-employment of thousands of teachers. *Mail & Guardian.* Retrieved from http://mg.co.za/article/2015-04-08.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(4), 535–569.

Olivier, M. A. J., & Venter, D. J. L. (2003). The extent and causes of stress in teachers in the George region. *South African Journal of Education, 23*(3), 186–192.

Park, C. L. (2011). Implicit religion and the meaning making model. *Implicit Religion, 14*(4), 405–419.

Park, J., & Kim, T. (2009). Do types of organizational culture matter in nurse job satisfaction and turnover intention? *Leadership in Health Services, 22*(1), 20–38.

Passer, M., Smith, R., Holt, N., Bremner, A., Sutherland, E., & Vliek, M. (2009). The science of psychology. In M. Passer, R. Smith, N. Holt, A. Bremner, E. Sutherland, & M. Vliek,

Health psychology: Adjusting to life (pp.732–745). Berkshire, United Kingdom: McGraw-Hill Education.

Paulse, J. (2005). *Sources of occupational stress for teachers with specific reference to the inclusive model in the Western Cape* (Master's thesis). Department of Psychology, University of the Western Cape, South Africa.

Peterson, C. (2006). *A primer in positive psychology.* Oxford: Oxford University Press.

Pierre, C. (2013). *The Interactive Effects of Coping Strategies, Gender, and Stress in the Prediction of Internalizing Symptoms in African American Youth: An Application of the Specificity Model.* (Master's thesis). Loyola University Chicago, Chicago, Illinois.

Rautenbach, C., & Rothmann, S. (2017). Psychometric validation of the Flourishing-at-Work Scale – Short Form (FWS-SF): Results and implications of a South African study. *Journal of Psychology in Africa*, *27*(4), 303–309. doi: 10.1080/14330237.2017.1347748

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development*, *42*(3), 223–232.

Reber, A. S., & Reber, E. S. (2001). *Dictionary of psychology* (3rd ed.). London, UK: Penguin Books.

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, *42*(1), 5–37.

Rothmann, S. (2013). From happiness to flourishing at work: A Southern African perspective. In M. P. Wissing (Ed.), *Well-being research in South Africa, cross-cultural advances in positive psychology* (pp.123–151), Dordrecht, The Netherlands: Springer.

Rothmann, S. (2015). *Flourishing of educators in South Africa.* Paper presented at the International Association of Cognitive Education (IACESA) Conference, Cape Town, South Africa.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54–67.

Ryff, C. D. (1995). Psychological well-being in adult life. *Current directions in psychological science*, *4*(4), 99–104.

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081.

Sapolsky, R. M. (1996). Why stress is bad for your brain. Science, 273(5276), 749–750.

Seifert, T. A. (2005). *The Ryff scales of psychological well-being*. Retrieved from http://www.liberalarts.wabash.edu/ryff-scales.

Selye, H. (1956). *The stress of life.* New York, NY: McGraw- Hill.

Sjöberg, A. & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 68*, 653–663.

Skinner, E. A., & Zimmer-Gembeck, M. J. (2011). Perceived control and the development of coping. In S. Folkman (Ed.), *Oxford library of psychology. The Oxford handbook of stress, health, and coping* (pp. 35–59). New York, NY: Oxford University Press.

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: a review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, *129*(2), 216.

Smets, E., Pieterse, A. H., Aalfs, C. M., Ausems, M. G., & van Dulmen, A. M. (2006). The perceived personal control (PPC) questionnaire as an outcome of genetic counseling: Reliability and validity of the instrument. *American Journal of Medical Genetics Part A*, *140*(8), 843–850.

Smith, A. W., & Baum, A. (2003). The influence of psychological factors on restorative function in health and illness. *Social psychological foundations of health and illness* (pp. 431–457). Oxford, UK: Oxford University Press.

Smith, J. (2009) Work phobia and sickness leave certificates. *African Journal of Psychiatry, 12*(4), 249–253.

Stanton, A. (2011). Regulating emotions during stressful experiences: The adaptive utility of coping through emotional approach. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 369–386). New York, NY: Oxford University Press.

Steinhardt, M. A., Smith Jaggars, S. E., Faulk, K. E., & Gloria, C. T. (2011). Chronic work stress and depressive symptoms: Assessing the mediating role of teacher burnout. *Stress and Health, 27*(5), 420–429.

Steyn, G. M., & Kamper, G. D. (2006). Understanding occupational stress among educators: an overview. *Africa Education Review, 3*(1-2), 113–133.

Stroebe, M. S. (2011). *The Dual Process Model: Latest thinking.* Paper presented at the Colin Murray Parkes Open Meetings. 16 February 2011. St Christopher's Hospice, London.

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*(11), 1161–1173.

Taylor, S. E. (2011). Social support: A review. In H. S. Friedman (Ed.), *Oxford library of psychology. The Oxford handbook of health psychology* (pp. 189–214). New York, NY: Oxford University Press.

Terre Blanche, M., Durrheim, K., & Painter, D. (2006*). Research in practice: Applied methods for the social sciences* (2nd ed.). Cape Town, SA: University of Cape Town Press.

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta- analytic findings. *Personnel psychology*, *46*(2), 259–293.

Thompson, S. C. (1981). A complex answer to a simple question: Will it hurt less if I can control it? *Psychological Bulletin*, *90*(1), 89–101.

Thompson, S. C. (2002). The role of personal control in adaptive functioning. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 202–213). New York: Oxford University Press.

Thompson, S. C., & Schlehofer, M. M. (2007). Perceived control. In M. Gerrard & K.D. McCaul (Eds.), *Health Behavior Constructs: Theory, Measurement, and Research.* National Cancer Institute Website: http://cancercontrol.cancer.gov/constructs.

Thompson, S. C., & Spacapan, S. (1991). Perceptions of control in vulnerable populations. *Journal of Social Issues*, *47*(4), 1–21.

Thompson, S. C., Sobolew-Shubin, A., Galbraith, M. E., Schwankovsky, L., & Cruzen, D. (1993). Maintaining perceptions of control: Finding perceived control in low-control circumstances. *Journal of Personality and Social Psychology*, *64*(2), 293–304.

Thompson, S.C. (2011). The role of personal control in adaptive functioning. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 271–278). New York: Oxford University Press.

Thyer, B. A. (2012). *Quasi-experimental research designs*. New York, NY: Oxford University Press.

Torres, A., & Pritchard, M. E. (2006, April). The effects of perceived control over distress on health. Paper presented at the annual meeting of the Rocky Mountain Psychological Association, Park City, UT.

Tuncay, T., Musabak, I., Gok, D. E., & Kutlu, M. (2008). The relationship between anxiety, coping strategies and characteristics of patients with diabetes. *Health and Quality of Life Outcomes*, *6*(1), 1.

Valle, M. F., Huebner, E. S., & Saldo, S. M. (2006). An analysis of hope as a psychological strength. *Journal of School Psychology*, *44*, 393–406.

Van Dick, R., & Wagner, U. (2001). Stress and strain in teaching: A structural equation approach. *British Journal of Educational Psychology*, *71*(2), 243–259.

Van Wyk, J. (1998). *Stres belewing by onderwysers* (DEd-proefskrif). Universiteit van Port Elizabeth, Port Elizabeth, Suid-Afrika.

Wallston, K. A., Wallston, B. S., Smith, S., & Dobbins, C. J. (1987). Perceived control and health. *Current Psychology*, *6*(1), 5–25.

Weiten, W. (2013). *Psychology: Themes and Variations.* (9th ed). Belmont, CA: Wadsworth, Cengage Learning.

World Health Organization (WHO). (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report.* WHO, Victorian Health Promotion Foundation, University of Melbourne. Retrieved from http://www.who.int/mental_health/evidence/en/promoting_mhh.pdf

Willers, M. (2009). Stress, coping behaviour and the psychological well-being of a group of South African teacher: The SABPA Study (Masters Dissertation). North-West

University, Potchefstroom. Retrieved from http://dspace.nwu.ac.za/bitstream/handle/10394/5028/?sequence=1

Williams, M., & Gersh, I. (2004). Teaching in mainstream and special schools: Are the stresses similar or different? *British Journal of Special Education*, *31*(3), 157–162**.**

Wissing, M. P., & Van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. *South African Journal of Psychology*, *32*, 32–44.

Y520. (nd). Pre-experimental designs for descriptions: Y520, Strategies for educational inquiry. Retrieved from

Yong, Z., & Yue, Y. (2007). Causes for burnout among secondary and elementary school teachers and preventive strategies. *Chinese Education & Society*, *40*(5), 78–85.

Zambianchi, M., & Bitti, P. E. R. (2014). The role of proactive coping strategies, time perspective, perceived efficacy on affect regulation, divergent thinking and family communication in promoting social well-being in emerging adulthood. *Social Indicators Research*, *116*(2), 493–507.

Chapter 2

Manuscript 1

Perceived Stress and Coping of Teachers: A Latent Profile Analysis

Keywords: coping strategies; latent profile analysis; perceived stress; teachers' coping strategies; teachers' perceived stress

Abstract

The aims of this study were to identify occupational stress profiles from the perceived stress responses of teachers, using a person-centred approach and to determine the relations between their stress profiles and coping strategies. A convenience sample of teachers (n = 209) in the Sedibeng East District in South Africa participated in a survey. The Perceived Stress Scale and Brief COPE inventory were administered. Four latent profiles for teachers were found, namely stress resisters, manage stress, overloaded and highly stressed. Teachers identified as stress resisters and manage stress scored significantly lower on two coping strategies, namely denial and disengagement, and self-blame, than those who showed stress-overloaded and highly stressed profiles. No statistically significant differences were found between the active coping and social support seeking coping strategies of the four stress profiles.

Stress is a part of our daily lives that can be considered a modern-day societal dilemma due to its often debilitating nature and this seems particularly true in the teaching profession (Chaaban & Du, 2017). Stress occurs when perceived demands on individuals exceed their knowledge, skills and capability levels to handle the impact of such demands (Folkman, 2011; Lazarus, 1990). According to Folkman and Moskowitz (2000), stress is regarded as a mostly negative process that could bring about depression, anxiety and psychosocial problems, albeit that Lazarus (1974) initially stated that stress was an inevitable aspect of life and was crucial in the development of strengths needed by individuals to survive, cope and flourish (Lyubomirsky, 2011). Teachers would thus be expected to respond differently to their perceived stress, ranging from viewing stress as a challenge to viewing it as adversity and would also employ different coping strategies. Such varied teacher profiles or groups were the focus of this research.

The Stress Concept

Various conceptualisations of stress exist in the literature. Moorhead and Griffin (2004) describe stress as an adaptive response to a stimulus or stressor that places psychological or physical demands on the individual. Robbins (2005) views stress as a dynamic condition where an individual is challenged with an opportunity, constraint, or demand related to expected consequences and for which these consequences are uncertain, indefinite and important. Baqutayan (2015) describes stress as events or situations that cause people to feel tension, pressure, or negative emotions or as the reaction to these situations. As far as work-related stress is concerned, Moss (2008) perceives work stress as any objective condition or change in the work environment that is appraised as potentially harmful, threatening, challenging, or frustrating, or any set of circumstances related to work that requires a change in the individual's ongoing life pattern.

Based on the stress process approach of Lazarus (1993, 2006), four distinct elements or dimensions can be identified: the first dimension is individual-environment interaction, where the stress process is initiated by the relations of an individual with the environment. The second dimension is a mental evaluation that occurs when the individual can separate the positive, good, non-threatening appraisals from the negative, unpleasant and threatening. The third dimension is effective stress relieving coping. The last dimension considers the influence or effects of stress on the individual. It would thus appear that the dynamics of the stress phenomenon are multiple and that its effects are felt by the individual at both the physiological and psychological levels in a given situation.

Work-related stress, the focus of this study, interferes with psychosocial well-being at work, resulting in a decline in work performance. For example, highly stressed teachers who are not coping well are often unable to efficiently guide, educate and support learners and the effect of this can be seen in undesirable academic and behavioural outcomes of learners (Ferguson, Mang, & Frost, 2017). Ferguson et al. found that teacher stress, further discussed below, was a combination of negative emotions such as anxiety, tension, anger and frustration in a stressful environment, which could influence their optimal functioning detrimentally at both psychological and physical levels.

Teachers' perceived stress

Teaching is a popular career choice, yet evidence has shown that teachers experience higher rates of stress in comparison to most other occupations (Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2017; Schonfeld, Bianchi, & Luehring-Jones, 2017). Studies conducted worldwide have revealed that the teaching profession is becoming increasingly challenging and demanding, affecting teachers' psychosocial well-being. Teachers are experiencing role intensification and the associated stress has an undesirable impact on the personal lives of most teachers and on their ability to meet the needs of learners (Ferguson et al., 2017).

Teaching is a multidimensional profession comprised of a multitude of challenging situations (Chaaban & Du, 2017; Mansfield, Beltman, Broadley & Weatherby-Fell, 2016). Unanticipated events or daily routine practices might challenge teachers. Kyriacou (2001) found that teacher stress stemmed from reactions such as anger, tension, anxiety, frustration and depression while performing a teaching task in a stressful environment. Such experiences, as stated before, may negatively influence their psychological and physical levels of functioning and may manifest in teachers experiencing emotional problems that, in turn, influence their ability to create and ensure an effective and safe learning environment in a typical class situation (Richards, Levesque-Bristol, Templin, & Graber, 2016; Cancio et al., 2018; Eaton, Anthony, Mandel, & Garrison, 1990; Henry, Bastian, & Fortner, 2011; Herman, Hickman-Rosa, & Reinke, 2018; Montgomery & Rupp, 2005; Wentzel, 2010).

In the constantly changing educational environment, South African teachers are expected to manage various challenges and cope effectively with stressors stemming from the profession, often resulting in poor learner performance, lack of commitment and motivation and poor and substandard teaching quality (Parray, Kumar, & Awasthi, 2016). The seriousness of the situation was indicated in the local press (Marais, 2016) where it was

reported that 5 000 South African teachers had resigned in 2015 and that close to 30 000 teachers had left the profession since 2011. This is alarming and is triggering a strong interest among researchers in this field of study, while also giving rise to increased recognition of the relationship between mental and physical health and work-related stress (Steyn & Kamper, 2006; Williams & Gersch, 2004).

Teachers are not a homogenous group, but are individuals with unique combinations of characteristics and experiences in their teaching roles. As stated by Greenberg and Baron (2003), they would differ in their experiences of and responses to stress, as well as in their actions to cope with stress. This could mean that types of teachers may exist regarding the perceived stress that they experience and that, among teachers, a typology or classification into abstract categories called subtypes could be identified (Van der Vaart, De Witte, Van den Broeck, & Rothmann, 2018). This study, therefore, aimed at investigating whether different types (profiles) of teachers could be identified, based on their reported perceived stress in the work context and whether such profile membership could be predicted by their coping strategies.

Coping and Coping Strategies

Different stress appraisals lead to different coping responses (Ntoumanis, Edmunds, & Duda, 2009). Herman, Hickman-Rosa and Reinke (2018) state that coping is linked to the stress experience, but has the potential for individual adaptation. Coping entails the various behaviours of individuals to handle and reduce their stress and Lazarus (1993) classically describes coping as the cognitive and behavioural efforts employed by an individual to deal with the demands that are created by the stressful person-environment transaction. Correspondingly, Tran (2016) views coping as responses used by an individual to deal with daily problems. These responses are used in order to restore balance by solving the problem, minimising the problem, being more adaptable towards it, or attempting to avoid it.

Coping theory proposes that two main types of coping strategies that include thoughts and actions are used by individuals to manage stressful situations (Folkman, 2011; Lam, Alvarado, & Lee, 2014; Lazarus & Folkman, 1984; Zambianchi & Bitti, 2014). First, problem-focused coping deals with the perceived stressor in order to manage and modify the actual problem, using strategies such as planning, active coping and suppressing competing activities (Lam et al., 2014; Mayordomo-Rodrígues, Meléndez-Moral, Viguer-Sengui, & Sales-Galan, 2015). Secondly, emotion-focused coping attempts to decrease the duress

caused by the stressor and involves strategies such as seeking emotional support, acceptance, denial and positive reinterpretation (Lam et al., 2014).

According to Mayordomo-Rodrígues et al. (2015), problem- and emotion-focused coping can facilitate each other, although, individuals use both coping strategies when needed, problem-focused coping strategies are mostly employed and are more often associated with favourable adjustments and success in dealing with stressors (Passer et al., 2009). Lazarus and Folkman (1984) explain that some coping strategies are not inherently better than others; it is merely a fact that effective coping calls for a fit between situational appraisals and the choice of coping responses.

Relating to what was said above about stress variability, Ntoumanis, Edmunds and Duda (2009) see coping as a dynamic process with substantial intra-individual and interpersonal variability, where individuals use different coping strategies at different phases of the same stressful encounter or from one stressful encounter to another. Coping strategies that are effective for one individual may not be effective for another, even if they are faced with the same specific stressors. Akbari and Eghtsadi (2017), for example, found that coping strategies had a significant influence on teachers' stress management and that by adopting appropriate coping strategies, they could reduce the negative consequences of stress experienced daily.

Coping with educator stress

The unstable nature of the South African teaching profession requires teachers to cope effectively and adequately with ongoing changes, demands and challenges (Jackson & Rothmann, 2005). Various factors that contribute to the stress teachers must cope with include overcrowding of classrooms due to a lack of qualified and experienced teachers, student misbehaviour, low self-motivation among learners and time constraints. These stressors can either motivate the teacher to cope effectively or result in discouragement, negativity, a sense of hopelessness, or even burnout (Jackson, 2004).

Teachers experience stress when the demands of the teaching environment exceed their ability to cope with these demands (Nasser, 2015) and those teachers who struggle to cope with educational demands are most likely to become overwhelmed (Dias-Lacy & Guirguis, 2017). Teachers require a variety of skills to cope with the challenges they face and they utilise cognitive, emotional and behavioural coping strategies to manage and adapt to stressful conditions and to alleviate perceived stress. Their coping strategies, personality traits

and the characteristics of the educational environment interactively influence the degree to which situations are perceived as stressful (Nasser, 2015). Similarly, Kyriacou (2001) found that teachers' stressors were unique to the individual and reliant on the interaction between the teachers' personality, values, skills and circumstances. Such variability of teachers' coping abilities could explain the finding of Mearns and Cain (2003) that not all teachers experience the stressors, or perceive stressful situations usually associated with chronic stress, to such an extent that they feel powerless or inadequate. Research also indicates that some teachers can manage their stressful environment through utilising resources (Skinner & Zimmer-Gembeck, 2011) and by applying adaptive coping strategies (Valle, Huebner, & Saldo, 2006).

Aims of this Study

The literature exposition set out above gave rise to the *research question*: could different statistical profiles of teachers be identified based on their reported perceived stress and would coping strategies used by teachers predict their profile membership? The *aims* with which to answer the research question were as follows: a) to investigate the perceived stress profiles of teachers by means of person-centred latent profile analysis; and b) to study the relationships between stress profiles and coping strategies.

In order to achieve the set aims, it is important to note that occupational stress can be studied from a person-centred or a variable-centred perspective (see Meyer & Morin, 2016). Variable-centred approaches investigate associations between variables and assume a homogenous sample. Person-centred approaches attempt to categorise and classify individuals into distinct groups, assuming a heterogeneous sample (Meyer & Morin, 2016; Von Eye & Bogat, 2006). In latent profile analysis, individual differences in observed item response patterns are explained by differences in profile membership (Geiser, 2013).

Method

The research design, participants and procedures of this study will be described below.

Research design

The research design was an *ex post facto* cross-sectional design, which means that a cross-sectional survey was done with the same group about their perceived stress and coping strategies in the teaching context. The research methods were quantitative and supported the positivist research paradigm (Devi, 2017).

Participants and procedures

Participants were sampled from the Sedibeng East District in the Gauteng province of South Africa. A convenience sample of teachers (n = 209) from eight schools, which included primary, secondary and special education schools, participated in the study.

After obtaining the Gauteng Department of Education's permission to conduct the research, as well as that of principals of schools and school governing bodies, the researcher and a research assistant visited the schools to meet the teachers and give them information about the nature of the research and their rights as participants in the research. Consent letters that described the nature of the research were made available and interested teachers signed these within four days and returned them to the research assistant at an agreed-on time and place. Only consenting teachers were included in the study. After that, booklets with the questionnaires were completed and returned to the researcher, who was also available for assistance during the process of questionnaire completion.

Data collection

A biographical questionnaire (BQ) developed by the researcher was used to obtain information about the teachers' gender, years of teaching experience, educational background, the grades they taught and the type of school where they were presently 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 are designed to tap into how unpredictable, uncontrollable and overloaded respondents find their lives (Cohen & Williamson, 1988). The scale includes questions about current levels of experienced stress and respondents are asked how often they feel a certain way. Participants respond by making use of a five-point Likert scale, ranging from zero (never) to four (very often). Higher scores indicate more perceived stress. Evidence for validity shows that higher PSS scores are associated with greater vulnerability to stressful life-event-elicited depressive symptoms (Cohen & Williamson, 1988). The Cronbach's alpha coefficient for the internal reliability of the PSS is .75 (Cohen, Kamarck, & Mermelstein, 1983). The PSS was used in a South African study by Hamad, Fernald, Karlan and Zinman (2008), with findings that adults in South Africa demonstrated 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's alpha of .72 (Hamad et al., 2008, p. 8).

The Brief COPE inventory (Carver, 1997) is a self-report questionnaire that was used to determine and assess a broad range of coping responses of educators when dealing with perceived daily stress The Brief COPE inventory consists of 28 items measuring 14 theoretically identified coping responses, with two items each that deal with ways people use to cope with the stress they are experiencing in their lives. The items measure the extent to which the participant uses a specific coping strategy (active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioural disengagement, and self-blame) as well as how much or how frequently they engage in the specific coping strategy on a four-point Likert scale (1 = not at all; 4 = very much). The Brief COPE scale can be subdivided into three main scales, namely positive reframing, venting and self-distraction (Carver, 1997). Even though the subscales have only two items each, their reliability meets or exceeds the value of .70, regarded as minimally acceptable. In a study by Louw and Viviers (2010), the Brief COPE inventory was used in South Africa to explore the factors that enabled police officers to cope more effectively with emotional stress. It was found that the Cronbach's alpha coefficients for reliability in that study were between .86 and .92. The rationale for using this scale in the current study was its psychometric quality and conciseness.

Both the PSS and the COPE are available in the public domain for research purposes.

Ethical considerations

The Humanities and Health Research Ethics Committee (HHREC) of the North-West University (NWU-HS-2017-0026) granted ethical approval for the study. All criteria required for ethics research as set out by the HHREC and other ethics policies and guidelines were strictly adhered to in this study.

Data analysis

Statistical analysis was conducted with SPSS 25.0 (IBM Inc., 2018) and Mplus 8.2 (Muthén & Muthén, 1998-2019). Descriptive statistics were computed to describe the data. Point estimates of scale reliability (rather than alpha coefficients) were computed through confirmatory factor analysis (CFA) (see Raykov, 2009). Cut-off values for scale reliability of .70 (Raykov, 2009) were used and Pearson correlations were employed to determine

correlations among the variables. Statistical significance was established at 95% ($p \leq .05$) and 99% ($p \leq .01$) and practical significance was established at .30 with a medium effect and .50 with a large effect (Cohen, 1988).

The data were analysed by performing latent profile analysis (LPA). The Lo-Mendell-Rubin likelihood ratio test (LMR) (Lo, Mendell, & Rubin, 2001) and the significant bootstrap likelihood ratio test (BLRT) were used for assessing the fit between two models that differed by one class and provided a *p*-value indicating the best-fitting model. The lower sample size-adjusted Bayesian information criterion (BIC) was also employed, as it is a good indicator of the best model fit (Nylund, Asparouhov, & Muthén, 2007). Lastly, entropy was used to provide an index of model classification quality. Values greater than .80 indicated adequate classification quality and values closer to 1.0 indicated better classification quality (Jung & Wickrama, 2008).

Results

In the following discussion, the results from this study into latent stress profiles and the coping strategies of teachers will be discussed.

Latent profile analysis

A latent profile analysis (LPA) with Mplus 8.2 (Muthén & Muthén, 1998-2019) was used to group participants based on responses to 10 questions about occupational stress rated on a five-point scale. A series of models with an increasing number of latent profiles were tested. Models were evaluated according to the lowest AIC and BIC values comparing the different models, entropy, the Lo-Mendell-Rubin (LMR LR) test, the adjusted LMR LR (ALMR LR) test and the bootstrapped likelihood ratio test (BLRT). Multivariate analysis of variance was used to investigate the relations between stress profiles and coping strategies.

Significant enhancement from the reference model to the model with more profiles led to a model being retained. Models were compared using the lowest BIC value and entropy values ranging from zero to one, where higher values were better (values smaller than .60 were not accepted). The Lo-Mendell-Rubin (LMR LR) test (Lo et al., 2001), the adjusted LMR LR test and the bootstrapped likelihood ratio test (BLRT) (Wang & Wang, 2012) were used in Mplus to test the number of classes in a mixture analysis. Posterior class membership probabilities, as well as entropy values, were used to specify the quality of class membership.

To determine the LPA model, several steps were followed. The first step included determining the ideal number of latent profiles. After that, an investigation of the latent

profile classification was done. The third step included labelling the latent profiles. The prediction of latent profile membership was completed during the fourth step. To determine the number of latent profiles, four models with different numbers of latent profiles were estimated and compared, starting with a single-class model and increasing the number of profiles one at a time. The fit indices are reported in Table 1. The Akaike information criterion (AIC) (1 849.62), the Bayesian information criterion (BIC) (1 871.26) and the sample size-adjusted BIC (ABIC) (1 852.23) values of the model with one latent class, were the largest, indicating that this model had the worst fit.

Table 1

Comparison of Different LPA Models

Model	AIC	BIC	ABIC	LMR LR test *p*-value	ALMR LR test *p*-value	BLRT *p*-value
One-class LPA	5 748.62	5 815.47	5 752.10	N/a	N/a	N/a
Two-class LPA	5 215.19	5 318.80	5 220.58	.0001	.0001	.0000
Three-class LPA	5 059.51	5 199.89	5 066.81	.0501	.0521	.0000
Four-class LPA	4 990.17	5 167.32	4 999.39	.0797	.0831	.0000
Five-class LPA	4 950.90	5 164.81	4 962.02	.5963	.6013	.0000

Next, the quality of the latent profile membership was investigated. The entropy values for the four-profile and five-profile LPA were .86 and .88 respectively, indicating a good classification (Clark, 2010). The average latent class probabilities for the four-profile LPA model were .89 (profile 1), .93 (profile 2), .92 (profile 3) and .96 (profile 4); this compares well to the recommended cut-off value of .70 or higher (Nagin, 1999). Classes were then labelled based on their means for the 10 items. Four latent stress profiles were found (see Figure 1).

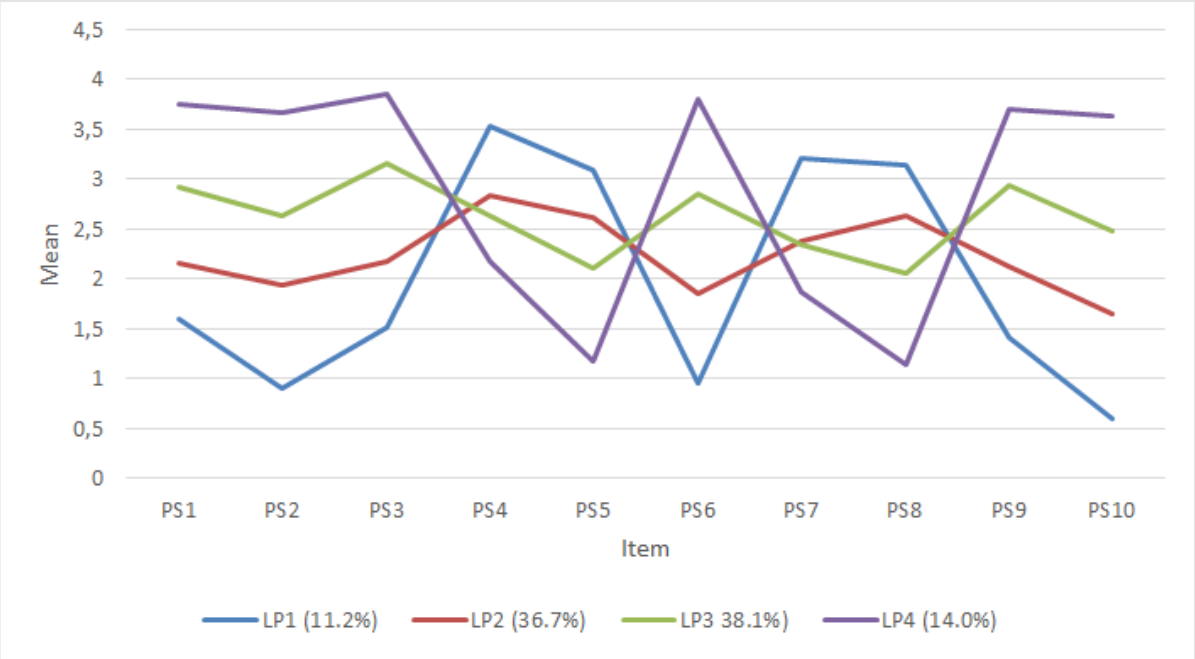


Figure 1. Latent stress profiles

Key to the latent profiles:

Question numbers	Question category	LP1: 11.2% Stress resisters	LP2: 36.7% Manage stress	LP3: 38.1% Overloaded	LP4: 14.0% Highly stressed
1, 2, 3	Upset by unexpected things Unable to control important things Felt nervous and stressed	Almost never to sometimes	Sometimes	Fairly often	Very often
4, 5	Confident about ability to cope Felt things going my way	Fairly often to very often	Fairly often	Sometimes to fairly often	Almost never to sometimes
6	Could not cope with things	Almost never	Almost never to sometimes	Sometimes to fairly often	Very often
7, 8	Able to control irritations Felt on top of things	Fairly often	Sometimes	Sometimes	Almost never to sometimes
9, 10	Angered by things outside control Felt difficulties piled up too high	Almost never	Sometimes	Sometimes to fairly often	Very often

Figure 1 shows that the most common profiles identified through person-centred analysis of participants' responses were "manage stress" (36.7% of the participants) and "overloaded" (38.1%). A total of 14% of the teachers formed part of the "highly stressed" profile, while 11.2% were "stress resisters". Thus, a total of 52.1% of the teachers formed part of two profiles, namely, "overloaded" and "highly stressed".

Latent profiles and coping strategies

The automatic BCH approach for estimating the mean of a distal continuous outcome across latent profiles (Asparouhov & Muthén, 2014; Bakk & Vermunt, 2016) was used in this study. The latent profile model was estimated using the 10 indicator variables of the PSS. The means of the auxiliary variables were estimated across the different classes with the BCH method to avoid shifts in determining the latent profile analysis. The BCH method makes use of weighted multiple-group analysis to identify where the groups correspond to the latent profiles and a shift in the classes is not possible because the profiles are known (Asparouhov & Muthén, 2014). Results using the BCH method can be seen in Table 2.

Table 2

Equality Tests of Means Across Profiles Using Posterior Probability-Based Multiple Imputations with Three Degrees of Freedom for the Overall Test and One Degree of Freedom for the Pairwise Tests

Active coping			Denial		
	Mean	SE		Mean	SE
Profile 1	- 0.14	0.16	Profile 1	- 0.38	0.09
Profile 2	0.01	0.06	Profile 2	- 0.24	0.06
Profile 3	0.03	0.07	Profile 3	0.15	0.06
Profile 4	0.02	0.11	Profile 4	0.52	0.11
Chi-square tests					
	χ^2	*p*		χ^2	*P*
Overall test	1.00	.80	Overall test	64.96	.00**
Profile 1 vs 4	0.68	.41	Profile 1 vs 4	40.62	.00**
Profile 2 vs 4	0.01	.91	Profile 2 vs 4	37.56	.00**
Profile 3 vs 4	0.00	.96	Profile 3 vs 4	8.32	.00**
Profile 1 vs 2	0.68	.41	Profile 1 vs 2	1.79	.18
Profile 1 vs 3	0.97	.32	Profile 1 vs 3	24.60	.00**
Profile 2 vs 3	0.06	.81	Profile 2 vs 3	19.44	.00**
Social support			Self-blame		
	Mean	SE		Mean	SE
Profile 1	- 0.15	0.16	Profile 1	- 0.45	0.12
Profile 2	- 0.10	0.08	Profile 2	- 0.33	0.06
Profile 3	0.09	0.07	Profile 3	0.25	0.08
Profile 4	0.12	0.14	Profile 4	0.55	0.12
Chi-square tests					
	χ^2	*p*		χ^2	*p*
Overall	4.76	.19	Overall	72.07	.00**
Profile 1 vs 4	1.63	.20	Profile 1 vs 4	33.73	.00**
Profile 2 vs 4	1.80	.18	Profile 2 vs 4	40.51	.00**
Profile 3 vs 4	0.04	.85	Profile 3 vs 4	3.92	.05*
Profile 1 vs 2	0.08	.77	Profile 1 vs 2	0.73	.39
Profile 1 vs 3	1.94	.16	Profile 1 vs 3	24.72	.00**
Profile 2 vs 3	2.75	.10	Profile 2 vs 3	31.43	.00**

* $p < .05$ ** $p < .01$

The results in Table 2 show that two coping strategies, namely active coping and social support, did not differ statistically significantly between the four stress profiles of teachers. Statistically significant differences existed between the denial ($\chi^2 = 64.96$, $p < .001$) and self-blame ($\chi^2 = 72.07$, $p < .001$) of different stress profiles. As far as denial is concerned, Table 2 shows that statistically significant differences existed between profiles 1 and 4 ($\chi^2 = 40.62$, $p < .001$), 1 and 3 ($\chi^2 = 24.60$, $p < .001$), 2 and 3 ($\chi^2 = 19.44$, $p < .001$), 2 and 4 ($\chi^2 = 37.56$, $p < .001$) and 3 and 4 ($\chi^2 = 8.32$, $p < .001$). Concerning self-blame, Table 2 shows that statistically significant differences existed between profiles 1 and 4 ($\chi^2 = 33.73$, $p < .001$), 1 and 3 ($\chi^2 = 24.72$, $p < .001$), 2 and 3 ($\chi^2 = 31.43$, $p < .001$), 2 and 4 ($\chi^2 = 40.51$, $p < .001$) and 3 and 4 ($\chi^2 = 3.92$, $p < .001$).

As displayed in Figure 2, teachers identified as stress resisters (profile 1) and those who manage stress (profile 2) scored statistically significantly lower than those identified as overloaded (profile 3) and highly stressed (profile 4) on the following two coping strategies: a) denial and disengagement: giving up trying to deal with stressors, refusing to believe that a stressor has happened, saying things to let unpleasant feelings escape, and giving up the attempt to cope; and b) self-blame: criticising myself and blaming myself for things that have happened.

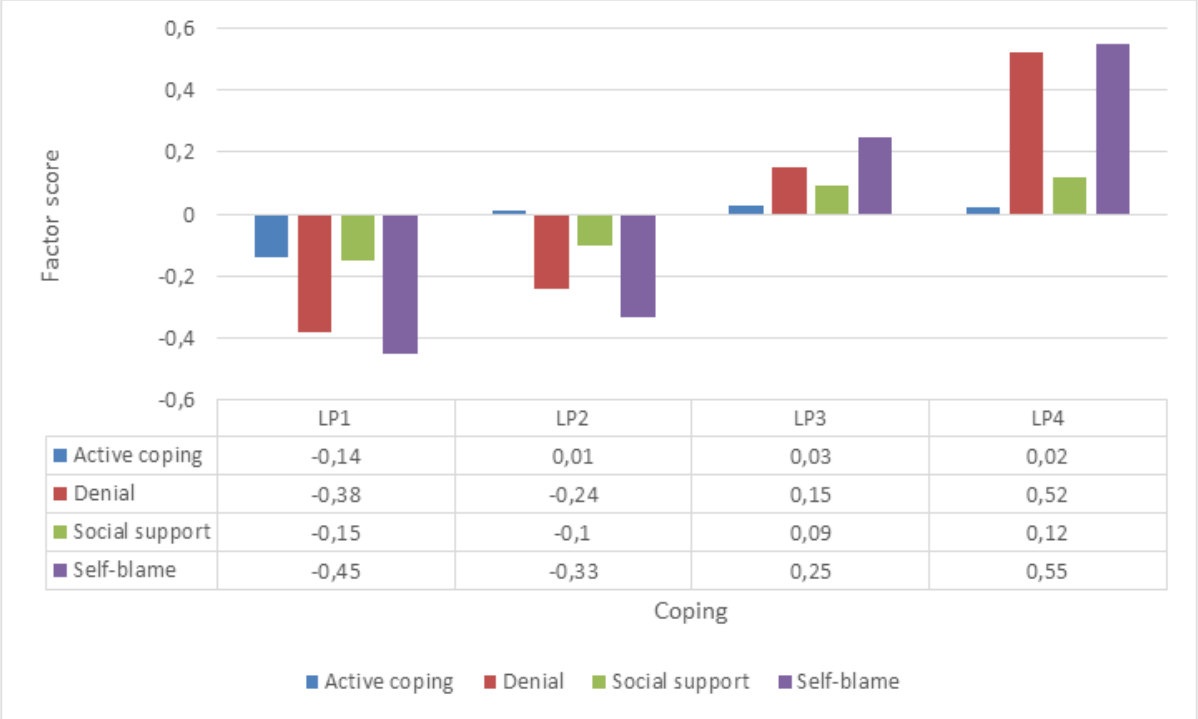


Figure 2. Stress profiles and coping strategies

Discussion

This study was aimed at identifying stress profiles from the perceived stress scores of teachers, using a person-centred approach and at determining the relations between stress profiles and coping strategies of teachers. From the results reported above, it was evident that these aims were met.

The most important findings were as follows: first, four latent profiles for teachers were found, namely stress resisters (P1), manage stress (P2), stress overloaded (P3) and highly stressed (P4); secondly, teachers identified as stress resisters and manage stress scored significantly lower on the coping strategies of denial and disengagement, as well as self-blame, than those who showed stress-overloaded and highly stressed profiles. Theoretically, the identification of four profiles for teachers based on their perceived stress scores was expected. Vast amounts of the literature exist that indicate that people perceive their stress as well manageable, moderately manageable, or unmanageable, as was reflected in the reported teacher profiles (Cohen & Janicki-Deverts, 2012; Steptoe, Dockrae, & Wardle, 2009; Zautra & Reich, 2011).

Considering the teacher profiles, profiles 3 and 4 indicated that 52 percent, or the majority of the teachers who participated in the research, experienced high levels of stress in the educational context. This finding corresponded to the earlier findings of Ngidi and Sibaya (2002), and Van Tonder and Williams (2009), who report on the high levels of stress of South African teachers. Monyatsi, Steyn and Kamper (2006) and Vazi et al. (2013) also indicate the difficulty that some teachers have in coping with their stress and then either burn out, leave the profession, or have other adverse outcomes.

Contrary to this, profiles 1 and 2 indicated that 48% of the participating teachers perceived their stress in the work context to be well managed and that they were stress resistant, or the stress to be moderately manageable and they could manage the stress. This finding agrees with that of Mearns and Cain (2003) and Valle et al. (2006) that there are many teachers who, despite the reality of the work stress that they experience, can manage the demands and even do well in their careers as teachers.

The four profiles identified for teachers with regard to their perceived stress in the educational context agree with statements made earlier about the diversity, in contrast to the homogeneity, of teachers in their perceptions of stress. Theoretical explanations for the individual differences in stress perceptions and management abound. These include, among

others, having a sense of coherence (Antonovsky, 1979), a sense of personal control (Skinner & Zimmer-Gembeck, 2001), optimism (Carver, Scheier, Miller, & Fulford, 2009), resilience (Masten, 2001; Bonanno, 2004), character strengths (Lim & Kim, 2014), social support (Taylor, 2011), a healthy lifestyle (Walsh, 2011), a sense of self-efficacy (Bandura, 1997), hardiness (Kobasa, Maddi & Kahn, 1982), positive emotions (Tugade & Fedrickson, 2004) and certain personality factors (McCrae, 2011).

Two further theoretical frameworks, from which the occurrence and diversity of teacher stress profiles that could be approached, are appraisal and the explanatory style, which will briefly be discussed below.

Appraisal refers to the events that people notice and how they choose to appraise or interpret them. Specifically, as was conceptualised by Lazarus and Folkman (1984), to approach stress through primary appraisal by interpreting how relevant an event is to one, that it is relevant but not threatening, or that it is stressful. For stressful events, a secondary appraisal evaluates whether coping resources and ways of dealing with the stress exist. Pertaining to the teacher stress profiles, those in profiles 3 and 4 appraised their teaching challenges as relevant, threatening and stressful and themselves as often helpless and overtaxed by the demands. The teachers with profiles 1 and 2 seemed to view the teaching demands as relevant, not threatening and although stressful, manageable by them. Research by Cooper and Bright (2001) and Espejo, Hammen and Brennan (2011) found that people's appraisals of stressful events were highly subjective, which seems to be in line with the current findings.

Explanatory styles refer to the explanations given for, or attributions made to negative events about their causes being either stable or unstable, global or specific, internal or external. Explanatory styles are also either optimistic or pessimistic (Seligman, 1998). According to this framework, teacher profiles 3 and 4 seemingly used more pessimistic explanatory styles in relation to the stressful educational context and had a narrative of "I can't cope, so it is my fault" (internal), "the demands will remain this way" (stable) and "will affect all aspects of my work" (global). In contrast, teachers with profiles 1 and 2 apparently had a more optimistic explanatory narrative, namely that the teaching demands were imposed by the department (external), were constantly changing (unstable) and were limited to certain aspects of the work (specific). According to Hefferon and Boniwell (2011), research indicates that the internal/external component of explanatory style is not as important in stress appraisals as the stability and globality features. Therefore, as far as the teachers participating in this study were concerned, if they saw the educational demands as unchangeable and as

affecting all aspects of their work, they would most likely fit into stress profiles of being stress overloaded or of being highly stressed.

The finding that teacher profiles 3 and 4, representing teachers who were stress overloaded or highly stressed, scored significantly higher on coping strategies of denial and disengagement, as well as self-blame, than those in profiles 1 and 2, could be considered from the theoretical framework of Scheier and Carver (1981). Scheier and Carver's theory of coping, views responses such as denial and self-blame as a self-focused approach to stress management. Self-focused coping is also a form of emotion-focused coping aimed at self-regulation in order to cope, in which the individual's energy is moved away from the task and focused on the self and often on task-unrelated thoughts. Scheier and Carver (1981) relate emotional self-focused coping to affective distress, Smith and Lazarus (1993) to guilt, Seligman (1992) to learned helplessness and Ellis (1987) to catastrophic thinking. Interestingly and in line with the discussion of appraisal and explanatory style above, Wells and Matthews (1996) state that the self-regulated, self-blame and denial coping tendency often occurs in stressful situations that are seen to be unchangeable (stable) and re-appraisal then finds such situations threatening.

In the practical reality of education in South Africa, from which the teacher participants in this study came, it is a concern that the majority (52%) seemed to rely on denial, self-blame and disengagement strategies in their efforts to cope with the demands of the teaching context. These findings seem to support those of various researchers who have reported on the high levels of psychosocial problems, burnout and intention to leave the profession found in the teaching population (Jackson & Rothmann, 2005; Lee, 2017).

However, the fact that 48% of the teachers in this study were not inclined towards the self-focused coping styles, must not be overlooked. Wells and Matthews (1996) state that those who do not use the mentioned self-defeating coping strategies seem to have higher levels of ego strength, in which their self-perception remains task orientated. The task orientation feeds back into feelings of competence that enhance their sense of self-efficacy (Bandura, 1997).

The findings discussed above call for further research into attribution styles, explanatory styles and the use of self-focused coping styles of teachers in South Africa and if possible, on a large scale. Although the aims of this research were met and the research question was answered, the study had some limitations.

Limitations and Recommended Future Research

Certain limitations of this study need to be acknowledged in relation to recommended future research directions. First, the small sample size, due to the limited number of teachers in each school, may have influenced the results. Future research needs to include larger samples to develop a comprehensive understanding of teachers' perceived stress experienced in a challenging work environment. Secondly, the results were obtained mostly by means of self-report measures, which limit the information about teachers' perceptions of stress and their ability to cope. Future studies could utilise multiple data sources to eliminate the effects associated with common method variance and to provide more information about the phenomenon. Thirdly, this study did not consider cultural differences with regard to perceived stress experienced and/or coping strategies used. Future research could focus on cross-cultural and intracultural comparisons in order to clarify the differences regarding teacher stress and the utilisation of coping strategies in various cultural groups and between these groups. It is recommended that the study be performed on more populations from different races and cultural heritages in South Africa, to increase generalisability. In the fourth place, qualitative research may also be conducted for deeper, in-depth data with regard to perceived stress and coping of South African teachers. A mixed method approach that includes interviewing a number of teachers may contribute to additional insights into teachers' perceived stress and coping strategies. A fifth limitation was that the measuring instruments used with teachers in this study were in English. These measuring instruments could be validated for use in the wider South African context and translation of these questionnaires into the major African languages is recommended. Finally, the stress and coping constructs could be combined with appraisal and explanatory style constructs and the relationships between the measurements operationalising these constructs could be investigated.

Conclusion

This study aimed at investigating whether different types (or profiles) of teachers could be identified, based on their reported perceived stress in the work context and at determining the relationships between teachers' stress profiles and their coping strategies. Teachers who are stress overloaded or highly stressed, tend to use the coping strategies of denial and disengagement, as well as self-blame. Even if they cope actively and use social support, denial, disengagement and self-blame were strongly related to negative stress experiences.

References

Akbari, R., & Eghtesadi, A. R. (2017). Burnout coping strategies among Iranian EFL teachers. *Applied Research on English Language*, *6*(2), 179–192.

Antonovsky, A. (1979). *Health, stress, and coping*. San Francisco, CA: Jossey-Bass.

Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: Using the BCH method in Mplus to estimate a distal outcome model and an arbitrary secondary model. *Mplus Web Notes*, *21*(2), 1–22.

Bakk, Z., & Vermunt, K. K. (2016) Robustness of stepwise latent class modeling with continuous distal outcomes. *Structural Equation Modeling: A Multidisciplinary Journal*, *23*(1), 20–31.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: Freeman.

Baqutayan, S. M. S. (2015). Stress and coping mechanisms: A historical overview. *Mediterranean Journal of Social Sciences*, *6*(2 S1), 479.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*, 20–28.

Cancio, E. J., Larsen, R., Mathur, S., Estes, M. B., Johns, B., & Chang, M. (2018). Special education teacher stress: Coping strategies. *Education and Treatment of Children*, *41*(4), 457–482.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4(1), 92–100.

Carver, C. S., Scheier, M. F., Miller, C. J., & Fulford, D. (2009). Optimism. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford library of psychology. Oxford handbook of positive psychology* (pp. 303-311). New York, NY: Oxford University Press.

Chaaban, Y. & Du, X. (2017). Novice teachers' job satisfaction and coping strategies: Overcoming contextual challenges at Qatari government schools. *Teaching and Teacher Education, 67*, 340–350.

Clark, S. L. (2010). *Mixture modeling with behavioral data.* (Unpublished doctoral dissertation.) University of California, Los Angeles, CA.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Orlando, FL: Academic Press.

Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology, 42*(6), 1320–1334.

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapam & S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology* (pp. 31–67). Newbury Park, CA: Sage.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385–396.

Cooper, L., & Bright, J. (2001). Individual differences in reactions to stress. In F. Jones & J. Bright (Eds.), *Stress: Myth, theory and research* (pp. 111–131). Essex, United Kingdom: Pearson Education.

Devi, P.S. (2017). *Research methodology: A handbook for beginners*. New York, NY: Norton Press.

Dias-Lacy, S. L., & Guirguis, R. V. (2017). Challenges for new teachers and ways of coping with them. *Journal of Education and Learning*, *6*(3), 265–272.

Eaton, W. W., Anthony, J. C., Mandel, W., & Garrison, R. (1990). Occupations and the prevalence of major depressive disorder. *Journal of Occupational Medicine, 32*, 1079–1087.

Ellis, A. (1987). A sadly neglected cognitive element in depression. *Cognitive Therapy and Research, 11*(1), 121–145.

Espejo, E. P., Hammen, C., & Brennan, P. A. (2012). Elevated appraisals of the negative impact of naturally occurring life events: a risk factor for depressive and anxiety disorders. *Journal of Abnormal Child Psychology*, *40*(2), 303–315.

Ferguson, K., Mang, C., & Frost, L. (2017). Teacher Stress and Social Support Usage. *Brock Education: A Journal of Educational Research and Practice*, *26*(2), 62–86.

Folkman, S. (2011). *The Oxford handbook of stress, health, and coping*. Oxford, United Kingdom: Oxford University Press.

Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*(6), 647–654.

Geiser, C. (2013). *Methodology in the social sciences. Data analysis with Mplus.* New York, NY, US: Guilford Press.

Greenberg, J., & Baron, R. A. (2003). *Behavior in organizations: Understanding and managing the human side of work* (8th ed.). Upper Saddle River, NJ: Pearson Education.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health*, *62*(6), 538–544.

Hefferon, K., & Boniwell, I. (2011). *Positive psychology: Theory, research and applications*. Maidenhead, Berkshire, United Kingdom: McGraw Hill Open University Press.

Henry, G. T., Bastian, K. C., & Fortner, C. (2011). Stayers and Leavers: Early-Career Teacher Effectiveness and Attrition. *Educational Researcher*, *40*(6), 271–280.

Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions*, *20*(2), 90–100.

Jackson, L. T. B. (2004). *Burnout and engagement of teachers in the North West Province* (Unpublished doctoral thesis). North-West University, Potchefstroom, South Africa. Retrieved from https://dspace.nwu.ac.za/bitstream/handle/10394/227/jackson_ltb.pdf;sequence=1

Jackson, L. T. B., & Rothmann, S. (2005). Work-related well-being of educators in a district of the North-West Province. *Perspectives in Education, 23*(1), 107–122.

Jung, T., & Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass*, *2*(1), 302–317.

Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology, 42*(1), 168–177.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27–35.

Lam, B. T., Alvarado, D., & Lee, W. (2014). Collective self-esteem and coping strategies among Vietnamese American adolescents. *Journal of Human Behavior in the Social Environment, 24*(4), 438–447.

Lazarus, R. S. (1974). Psychological stress and coping in adaptation and illness. *The International Journal of Psychiatry in Medicine*, *5*(4), 321–333.

Lazarus, R. S. (1990). Theory-based stress measurement. *Psychological Inquiry,1*(1), 3–13.

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine, 55*(3), 234–247.

Lazarus, R. S. (2006). *Stress and emotion: A new synthesis*. New York, NY: Springer.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Lee, Y.H. (2017). Emotional labour, teacher burnout and turnover intention in high school physical education teaching. *European Physical Education Review, XX(X),* 1-18. DOI:10.1177/1356336X17719559/journals.sagepub.com/home/epe.

Lim, Y. J., & Kim, M. N. (2014). Relation of character strengths to personal teaching efficacy in Korean special education teachers. *International Journal of Special Education, 29*(2), 53–58.

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*(3), 767–778.

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on the wellbeing and performance of educators: A systematic review of the empirical literature. *Teaching and Teacher Education, 61,* 132–141.

Louw, G. J., & Viviers, A. (2010). An evaluation of a psychosocial stress and coping model in the police work context. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 36*(1), 11.

Lyubomirsky, S. (2*011).* Hedonic adaptation to positive and negative experiences. In S. Folkman (Ed.), *Oxford handbook of stress, health, and coping* (pp. 200–224). New York, NY: Oxford University Press.

Mansfield, C. F., Beltman, S., Broadley, T., & Weatherby-Fell, N. (2016). Building resilience in teacher education: An evidenced informed framework. *Teaching and Teacher Education, 54*, 77–87.

Marais, A. (2016, Maart 3). 5000 onnies waai in 2015. *Beeld,* p 13.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227–238.

Mayordomo-Rodríguez, T., Meléndez-Moral, J. C., Viguer-Segui, P., & Sales-Galán, A. (2015). Coping strategies as predictors of well-being in youth adult. *Social Indicators Research, 122*(2), 479–489.

McCrae, R. R. (2011). Personality theories for the 21st century. *Teaching of Psychology, 38*(3), 209–214.

Mearns, J., & Cain, J. E. (2003). Relationships between teachers' occupational stress and their burnout and distress: Roles of coping and negative mood regulation expectancies. *Anxiety, Stress & Coping: An International Journal, 16*(1), 71–82.

Meyer, J. P., & Morin, A. J. (2016). A person- centered approach to commitment research: Theory, research, and methodology. *Journal of Organizational Behavior, 37*(4), 584–612.

Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education/Revue Canadienne De l'éducation, 28*(3), 458–486.

Monyatsi, P., Steyn, T., & Kamper, G. (2006). Teacher perceptions of the effectiveness of teacher appraisal in Botswana. *South African Journal of Education, 26*(3), 427–441.

Moorhead, G., & Griffin, R. (2004). *Organizational behaviour: Managing people and organizations* (7th ed.). Boston, MA: Houghton Mifflin.

Moss, C. A. (2008). Power of the five elements: path to healthy aging and stress resistance. Retrieved from http://northatindiabooks, wordpress.com

Muthén, L. K., & Muthén, B. O. (1998-2019). *Mplus user's guide.* Los Angeles, CA: Muthén & Muthén.

Nagin, D. S. (1999). Analyzing developmental trajectories: A semiparametric, group-based approach. *Psychological Methods, 4*(2), 139.

Nasser, F.A.A. (2015). Teacher Stress and Coping: The Role of Personal and Job Characteristics. Procedia – Social and Behavioral Sciences, 185, 374-380.

Ngidi, D. P., & Sibaya, P. T. (2002). Black teachers' personality dimensions and work-related stress factors. *South African Journal of Psychology*, *32*(3), 7–15.

Ntoumanis, N., Edmunds, J., & Duda, J. L. (2009). Understanding the coping process from a self-determination theory perspective. *British Journal of Health Psychology*, *14*(2), 249–260.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(4), 535–569.

Parray, W., Kumar, S., Awasthi, P. (2016), Stress among teachers: A theoretical examination, *International Journal of Indian Psychology, 3*(4), 57.

Passer, M., Smith, R., Holt, N., Bremner, A., Sutherland, E., & Vliek, M. (2009). The science of psychology. In M. Passer, R. Smith, N. Holt, A. Bremner, E. Sutherland, & M. Vliek, *Health psychology: adjusting to life* (pp.732–745). Berkshire, United Kingdom: McGraw-Hill Education.

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development*, *42*(3), 223-232.

Richards, K. A., Levesque-Bristol, C., Templin, T. J., & Graber, K. C. (2016). The impact of resilience on role stressors and burnout in elementary and secondary teachers. *Social Psychology of Education*, *19*(3), 511–536.

Robbins, S. P. (2005). *Organisation behaviour* (11th ed.). Englewood Cliffs, NJ: Pearson Prentice Hall.

Scheier, M. F., & Carver, C. S. (1981). Private and public aspects of self. *Review of personality and social psychology*, *2*, 189-216.

Schonfeld, I. S., Bianchi, R., & Luehring-Jones, P. (2017). Consequences of job stress for the psychological well-being of teachers. In T. M. McIntyre, S. E. McIntyre, & D. J. Francis (Eds.), *Educator stress - An occupational health perspective* (pp. 55–75). Cham, Switzerland: Springer International Publishing.

Seligman, M. E. P. (1992). *Helplessness: On depression, development, and death*, San Francisco, CA: Freeman.

Seligman, M. E. P. (1998). Building human strength: Psychology's forgotten mission. *APA Monitor*, 21(9).

Skinner, E. A., & Zimmer-Gembeck, M. J. (2011). Perceived control and the development of coping. In S. Folkman (Ed.), *Oxford library of psychology. The Oxford handbook of stress, health, and coping* (pp. 35–59). New York, NY: Oxford University Press.

Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion, 7*(3-4), 233–269.

Steptoe, A., Dockrae, S., & Wardle, J. (2009). Positive affect and psychobiological processes relevant to health. *Journal of Personality*, *77*(6), 1747–1776.

Steyn, G. M., & Kamper, G. D. (2006). Understanding occupational stress among educators: an overview. *Africa Education Review, 3*, 113–133.

Taylor, S. E. (2011). Social support: A review. In H. S. Friedman (Ed.), *Oxford library of psychology. The Oxford handbook of health psychology* (pp. 189–214). New York, NY: Oxford University Press.

Tran, V. D. (2016). Coping styles with student misbehavior as mediators of teachers' classroom management strategies. *International Journal of Higher Education*, *5*(1), 1–10.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*(2), 320–333.

Valle, M. F., Huebner, E. S., & Saldo, S. M. (2006). An analysis of hope as a psychological strength. *Journal of School Psychology*, *44*, 393-406.

Van der Vaart, L. Van Witte, H. D., den Broeck, A. V., & Rothmann, S. (2018). A psychosocial typology of the unemployed in South Africa. *South African Journal of Psychology*, *48*(2), 179–192.

Van Tonder, C. L., & Williams, C. (2009). Exploring the origins of burnout among secondary educators. *SA Journal of Industrial Psychology, 35*(1), 204–218.

Vazi, M. L. M., Ruiter, R. A. C., Van den Borne, B., Martin, G., Dumont, K., & Reddy, P. S. (2013). The relationship between wellbeing indicators and teacher psychological stress in Eastern Cape public schools in South Africa. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, *39*(1), 10.

Von Eye, A., & Bogat, G. A. (2006). Person-oriented and variable-oriented research: Concepts, results, and development. *Merrill-Palmer Quarterly, 52*(3), 390–420.

Walsh, R. (2011). Lifestyle and mental health. *American Psychologist*, *66*(7), 579–592.

Wang, J., & Wang, X. (2012). Structural equation modeling: Methods and applications. New York, NY: Wiley.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy*, *34*(11-12), 881–888.

Wentzel, K. R. (2010). Students' relationships with teachers. In J. L. Meece & J. S. Eccles (Eds.), *Handbook of research on schools, schooling, and human development* (pp. 75–91). New York, NY: Routledge

Williams, M. & Gersch, I. (2004), Teaching in mainstream and special schools: Are the stresses similar or different. *British Journal of Special Education, 31*(3), 157–162.

Zambianchi, M., & Bitti, P. E. R. (2014). The role of proactive coping strategies, time perspective, perceived efficacy on affect regulation, divergent thinking and family communication in promoting social well-being in emerging adulthood. *Social Indicators Research, 116*(2), 493–507.

Zautra, A. J., Reich, & J. W. (2011). The meanings, methods and measures of a fundamental characteristic of human adaptation. In: Folkman, S. (Ed.). *The Oxford handbook of stress health and coping* (pp. 173–185). Oxford, New York, NY: Oxford University Press.

Chapter 3

Manuscript 2

Teachers' Perceived Stress, Coping Strategies, Mental Health at Work and the Intention to Leave the Profession

Keywords: coping; coping strategies; intention to leave; mental health; perceived stress

Abstract

The aims of this study were to investigate the relationships between teachers' perceived stress, strategies to deal with stress, mental health at work and intention to leave the teaching profession. A convenience sample of teachers (n = 209) in the Sedibeng East District in South Africa participated in a survey. The Perceived Stress Scale (PSS) and Brief COPE inventory, Flourishing at Work Scale (Short Form) (FAWS-SF) and Workplace Evaluation Questionnaire (WEQ) were administered. Descriptive statistics, reliabilities and correlations were calculated and significant medium to large practical effect sizes were found on most of the correlations. Mental health of teachers was found to be predicted by low negative stress and active coping. Low mental health at work and high negative stress predicted intention to leave the teaching profession. Negative stress indirectly and positively through mental health, affected the intention to leave the teaching profession.

The unstable nature of the South African teaching profession demands from teachers to cope effectively and adequately with ongoing changes, demands and challenges, causing them to experience continuous pressure and stress (Chaaban & Du, 2017; Jackson & Rothmann, 2005; Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2017; Schonfeld, Bianchi, & Luehring-Jones, 2017). Uncertainties experienced, an inability to effectively cope and adapt to changes and challenges, together with ongoing transformation and transition within the South African education system, can contribute to unproductive outcomes and may have detrimental consequences on teaching and learning and for teachers as well as their learners (Chan, 2006; Steyn & Kamper, 2006). Although some teachers succeed in coping with the adverse working conditions (Nasser, 2015), the intention to leave the profession by both successful and struggling teachers is high (Baloyi & Ramasa, 2016). In this study the stress of teachers, their coping strategies and mental health, as well as their intention to leave the profession, were investigated. Following, the constructs of this study are briefly described.

Stress

Stress is a worldwide phenomenon and the result of positive or negative life experiences (Papathanasiou, Tsaras, Neroloatsiou, & Roupa, 2015). A stressful situation is seen as one that is experienced by the individual as threatening or harmful and it may alter or interfere with a persons' physical and psychological well-being (Vaughn & Roesch, 2003). According to Baqutayan (2015), stress has three distinct meanings. First, stress could refer to an external stimulus, any event or environmental stimulus that causes a person to experience tension. Secondly, stress could refer to an internal interpretation of perceived tension or arousal (emotive, defensive and coping processes). Lastly, stress may manifest as a physical and psychological reaction considered as supportive behavioural attempts at coping. Stress thus suggests any situation that evokes undesirable thoughts and feelings in a person (Baqutayan, 2015). Moss (2008), more contextually described work stress as any objective condition or change in the work environment that is perceived as potentially harmful, threatening, challenging or frustrating, or any set of circumstances related to work that requires change in the individual's ongoing life pattern.

Teachers' perceived stress

Teachers are imperative role-players within the educational system. They assume a tremendous responsibility and carry out an important task towards society, educating children and preparing them for the future (Avci, Bozgeyikili, & Risici, 2017). Teaching as a

profession, is recognised as demanding and stressful (Alhija, 2015; Chaaban & Du, 2017; Griffith, Steptoe, & Cropley, 1999; Mansfield, Beltman, Broadley, & Weatherby-Fell, 2016) and teachers negatively experience stress when the demands of the educational situation exceed their ability to cope with these demands. Teachers are pressured to increase learner performance within sometimes challenging and difficult circumstances. Such pressures on them often lead to them experiencing greater stress (Berryhill, Linney, & Fromewick, 2009), which may in turn negatively influence their own and their learners' performance (Brown, Ralph, & Brember, 2002), a vicious circle thus.

Teacher stress is described in terms of unpleasant negative emotions such as anger, frustration, anxiety, depression and nervousness that the teacher experiences due to work-related challenges and circumstances (Collie, Shapka, & Perry, 2012; Kyriacou, 1987, 2001; Liu & Onwuegbuzie, 2012). Such experiences may adversely influence their psychological and physical levels of performance and may manifest in teachers experiencing emotional problems that in turn, influence their ability to create and ensure an effective and safe learning environment within a typical class situation (Cancio et al., 2018; Eaton, Anthony, Mandel, & Garrison, 1990; Henry, Bastian, & Fortner, 2011; Herman, Hickman-Rosa & Reinke, 2018; Montgomery & Rupp, 2005; Richards, Levesque-Bristol, Templin, & Graber, 2016; Wentzel, 2010). Teacher stress, furthermore, can be conceptualised as an imbalance between risk and protective factors, where stress stems from risks at a personal, social and organisational level (Prilleltensky, Neff, & Bessel, 2016). When the risk factors exceed the protective factors, teachers' ability to cope with difficulties and challenges is repressed and likely to result in stress, which hinders a sense of well-being (Prilleltesky et al., 2016). The Perceived Stress model of Cohen and Williamson (1988), will be used in this study.

Coping Strategies

Lazarus (1993) classically describe coping as the cognitive and behavioural efforts employed by an individual to deal with the demands that are created by the stressful person-environment transaction, whereas, more recently, Herman, Hickman-Rosa, and Reinke (2018) state that coping is aimed at managing the stress experience, but also has the potential for individual adaptation.

Coping is viewed as effective cognitive responses used by an individual to deal with daily problems and these responses are used in order to restore balance by solving the problem, minimising the problem, being more adaptable towards it or, as attempts to avoid it

(Tran, 2016). Stressful experiences upset the balance in psychological functioning, exerting a negative impact on a person's general performance and well-being (Lazarus & Folkman, 1984). To restore the balance, it is necessary to evaluate the potential threat or stressors posed by the situation and to utilise coping resources and strategies. If stressful situations cannot be alleviated through active and meaning-based coping strategies, defence coping strategies may provide a needed, although short term, psychological escape (Cramer, 2000).

Coping has, furthermore, been called a process of adaptation and a stabilising factor that maintains psychosocial functioning during stress (Moos & Schaefer, 1993), as well as individuals' use of adaptive strengths and capacity for resilience, as constructive action in the face of challenge (Holahan & Moos, 1994). According to Aldwin (2011), coping is an adaptive process that potentially mediates the effects of risk or adversity during the development of competence. Effective coping enables individuals to resolve problems, relieve emotional distress, strive to succeed and accomplish goals (Brown, Westbrook, & Challagalla, 2005). Chesney et al. (2006) indicate that adaptive coping refers to situations in which there is a fit between the perceived controllability of the stressor and the choice of coping strategy to be utilised, given a specific situation. Weiten (2013) proposes the following features of constructive/adaptive coping: a) it involves confronting problems directly, is task relevant and action-orientated. b) It is based on realistic appraisals of the stress and available coping resources, in which some short-lived self-deception may be adaptive. c) It entails the recognition and regulation of potentially disruptive emotional reactions to stress.

The difficult nature of the local teaching profession demands from teachers to cope effectively and adequately with ongoing changes, demands and challenges, causing them to experience continuous pressure and stress (Jackson & Rothmann, 2005). Teachers require a variety of skills to cope with the challenges they face, and they utilise cognitive, emotional, and behavioural coping strategies to manage and adapt to stressful conditions and to alleviate perceived stress. Their coping strategies, personality traits and the characteristics of the educational environment interactively influence the degree to which situations are perceived as stressful or manageable (Nasser, 2015). The Brief COPE model of Carver (1997) will be used in this study.

Mental Health and Well-being

Due to the fact that significant numbers of teachers worldwide struggle with high levels of mental distress as a result of the negative and highly demanding environment in which they work, mental health and well-being was considered important in this study (Chaplain, 2008; Jackson, Rothmann & Van de Vijver, 2006; Johnson, Cooper, Cartwright, Donald, Taylor, & Millet, 2005; Kyriacou, 2001; Pisanti, Gagliardi, Razzino, & Bertini, 2003; Rasku & Kinnunen, 2003).

Mental health is the state of wellness that allows individuals to practice their skills, cope with daily stress, work successfully and contribute significantly to their environment (Bones, Pérez, Rodríguez-Sanz, Borrel, & Obiols, 2010). This view agrees with the definition of mental health provided by the World Health Organization (WHO, 2004) describing it as a state of well-being in which an individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully and be able to make a contribution to their community.

Well-being, as an aspect of mental health, entails physical-, cognitive-, emotional-, social and spiritual wellness dimensions and can be defined as a broad state of health (Diener & Lucas, 1999; INEE, 2011). Well-being is furthermore regarded as a dynamic process that includes all that is positive, desirable and good for a person, namely a meaningful social role, being happy and hopeful, living according to good values, effective coping, positive social relationships and support and security (Diener & Lucas, 1999; INEE, 2011, Peterson, 2006).

The Keyes (2004, 2005, 2007) model of optimal mental health indicates that emotional well-being, psychological well-being and social well-being contribute in equal measures to the mental health of an individual and Keyes (1998, 2002, 2005), defines mental health as the presence of sufficient levels of emotional, psychological and social well-being and the absence of psychopathology. The Keyes model could also be seen as a model of psychosocial well-being, in which emotional well-being comprises individual happiness or subjective wellness, life satisfaction and mostly positive emotions. Psychological well-being includes features of well-being identified by Ryff (1989) as self-acceptance, personal growth, purpose in life, autonomy, positive relations with others and environmental mastery and social well-being involves social acceptance, social actualisation, social contribution, social coherence and social integration, as proposed by Keyes and Lopez (2002). The Keyes model of complete mental health is currently considered as the most inclusive, comprehensive and

multi-faceted framework for understanding psychosocial well-being (Keyes, 2002, 2013; Keyes, Wissing, Potgieter, Temane, Kruger, & Van Rooy, 2008). Within this model, Keyes refers to the positive end of the well-being spectrum as positive mental health or flourishing and the negative pole of the continuum as low mental health or languishing (Joshanloo, Wissing, Khumalo, & Lamers, 2013). Mental illness and well-being are not the opposite ends of a single continuum, but fit into the two-continuum multilateral model of well-being as developed by Keyes (2002, 2005), in which emotional well-being indicates states of positive feeling, whereas psychological and social well-being in turn indicate positive functioning.

This model of positive mental health has been applied by both Keyes (2005) and Rothmann (2013) in the workplace, where better work-related outcomes were found among those who were flourishing. Rothmann (2013) extended Keyes' (2002; 2005) multidimensional perspective of emotional well-being, psychological and social well-being or flourishing in life, to the work setting. He deviated from Keyes' (2002; 2005) model to include different sub-dimensions of emotional well-being (EWB), psychological well-being (PWB) and social well-being (SWB), making it more work related. The Flourishing at Work Scale – Short Form (FAWS-SF) encompasses three dimensions: emotional well-being (EWB), psychological well-being (PWB) and social well-being (SWB). Emotional well-being comprises three sub-dimensions, namely positive affect, negative affect and job satisfaction (Rautenbach & Rothmann, 2017). Psychological well-being comprises six sub-dimensions, namely autonomy satisfaction, competence satisfaction, relatedness satisfaction, learning, meaningful work and engagement. Social well-being comprises five sub-dimensions, namely social acceptance, social actualisation, social, social contribution and social integration. Rothmann (2013) found that job-contextual factors better predicted organisational outcomes than flourishing in general (Redelinghuys, 2016). Positive mental health (flourishing) is, therefore, associated with better general and work functioning, with those individuals who are flourishing reporting lower absenteeism from work, high morale, job satisfaction and other indicators (Keyes, 2002). For the purposes of this study, Rothmann's (Rautenbach & Rothmann, 2017) adapted model of the Keyes Mental Health Continuum will be used.

Intention to Leave

South Africa is currently experiencing an alarming situation where teachers are resigning from the profession in droves (Baloyi & Ramosa, 2016). In 2014, about 14 000 teachers resigned, of which nearly 4 600 teachers resigned from teaching in November of that year

(Nkosi, 2015). The South African Democratic Teachers Union (SADTU), quoted by eNCA (2015), confirmed the high numbers of teachers leaving the profession.

Intention to leave refers to a teacher's conscious and intentional frame of mind to part ways with the educational institution where employed (Tett & Meyer, 1993). Kahumuza and Schlechter (2008) describe intention to leave as the strength of an employee's viewpoint that he or she no longer wants to work for his or her organisation, while Park and Kim (2009) add that intention to leave the profession is considered as the final cognitive decision-making process whereby employees/teachers actively search for alternative employment opportunities. Although a teacher's intention to leave may not translate into actual behaviour, intention to leave a profession is regarded as an antecedent to actual career change (Griffeth, Hom, & Gaertner, 2000; Rhodes & Doering, 1993). According to Darling-Hammond (2010), teachers typically leave a school for two main reasons: to leave the profession (attrition) or to leave one school for another (migration within the profession).

Stress was found to be one of the clearest predictors of teacher attrition (Borman & Dowling, 2008; Brownell, Smith, McNellis, & Miller, 1997). Teachers' stress and the great number of teachers exiting from the educational context, therefore, are alarming and threatening quality education and subsequent student performance (Steinhardt, Smith Jaggars, Faulk, & Gloria, 2011).

Aims of this Study

This study broadly aimed at investigating the relationships between teachers' perceived stress, their strategies to deal with such stress, their mental health at work and their intention to leave the teaching profession.

Specific aims were to:

- Identify and test measurement and structural models for best statistical fit.
- Determine reliabilities of and correlations between the identified factors as well as the practical effect sizes of correlations.
- Predict mental health at work and the intention to leave the profession by teachers, by means of perceived stress and coping strategies.
- Calculate the indirect effects of perceived stress through mental health on the intention to leave the profession.

Method

In this study a literature review was done and served the purpose of informing study aims and of conceptualizing the constructs used in the research. Furthermore an empirical research was done that will be described below.

Research design

The research design was an ex post facto cross-sectional design, which means that a cross-sectional survey was done by means of the same group of teachers completing validated questionnaires about their perceived stress, coping strategies, mental health and intention to leave. The research methods were quantitative and supported the positivist research paradigm (Devi, 2017).

Participants in and procedures of the study

Participants were sampled from the Sedibeng East District in the Gauteng province of South Africa. A convenience sample of teachers (n=209) from eight schools, which included primary, secondary and special education schools, participated in the study.

After receipt of the GDE's permission to conduct the research, as well as that of headmasters of schools and the School Governing Body, the researcher and a research assistant visited the schools to meet the teachers and give them information about the nature of the research and their rights as participants therein. Consent letters clearly describing the nature of the research were made available and interested teachers signed these within four days and returned them to the research assistant at an agreed upon time and place (only consenting teachers were included in the study). Thereafter, booklets with the questionnaires were completed and returned to the researcher, who was also available for assistance during the administration of the questionnaires.

Data collection

A biographical questionnaire (BQ) developed by the researcher was used to obtain information about the teachers' gender, years of teaching experience, educational background, grades taught and the type of school where they are presently teaching.

The Perceived Stress Scale (PSS) (Cohen & 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

tap how unpredictable, uncontrollable and overloaded respondents find their lives (Cohen & Williamson, 1988). The scale includes questions about current levels of experienced stress and respondents are asked how often they felt in a certain way. Participants respond by making use of a five-point Likert scale ranging from zero (never) to four (very often). Higher scores indicate more perceived stress. Evidence for validity showed that higher PSS scores are associated with greater vulnerability to stressful life-event elicited depressive symptoms (Cohen & Williamson, 1988). The Cronbach alpha coefficient for the PSSs internal reliability is .75 (Cohen, Kamarck, & Mermelstein, 1983). The PSS has been used in a South African study by Hamad, Fernald, Karlan and Zinman (2008), with findings that adults in South Africa demonstrate rates of perceived stress at or above levels elsewhere in the developing world. Scores ranged from zero to 40 and the PSS had a Cronbach alpha of .72 (Hamad et al., 2008, p. 8). The rationale for using the PSS was to determine the teachers' global perceptions of stress and although it can be generalised to any situation that the participant may have encountered, this research focussed on teachers' job-related experiences over a period of about one month.

The Brief COPE Inventory (Carver, 1997) is a self-report questionnaire that was used to determine and assess a broad range of coping responses of educators' when dealing with perceived daily stress. The Brief COPE inventory consists of 28 items measuring 14 theoretically identified coping responses, with two items each that deal with ways people use to cope with the stress they are experiencing in their lives. The items measure the extent to which the participant uses a specific coping strategy (active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioural disengagement, and self-blame) as well as how much or how frequently they engage in the specific coping strategy on a four-point Likert scale (1 = not at all; 4 = very much). The Brief COPE scale can be sub-divided into three main scales, namely positive reframing, venting and self-distraction (Carver, 1997). Even though the sub-scales have only two items each, their reliability all meet or exceed the value of .70, regarded as acceptable. 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 alpha coefficients for reliability were between .86 and .92. The rationale for using this scale is its psychometric quality and conciseness in measuring teachers' coping strategies.

The Flourishing at Work Scale – Short Form (FAWS-SF) (Rautenbach & Rothmann, 2017), is a 21-item scale based on the original 39 item scale of the authors and measures expressions of emotional, psychological and social well-being at work. Respondents indicate the frequency with which they experienced specific aspects of the three dimensions of well-being during the past month, on a six-point-scale ranging from one (never) to six (every day). Such a response scale allows for the categorisation of levels of well-being corresponding to the three classes used by Keyes (2002, 2005, 2007), namely emotional, psychological and social well-being, to assess positive mental health or flourishing. To flourish, a person has to experience every day/almost every day, at least one of the three aspects of emotional well-being and at least eight of the 14 aspects of positive functioning or psychosocial well-being. Languishing or low mental health would be indicated by never/once or twice, experiencing the well-being features and moderate work well-being or mental health would mean neither flourishing nor languishing. Rautenbach and Rothmann (2017) reported internal consistencies of .82 to .90, indicating acceptable reliability of the FAWS-SF. The FAWS-SF was used with 779 participants in an alcoholic beverage company in South Africa. The reason for including the FAWS-SF in this study is the fact that it investigates the mental health or psychosocial well-being of teachers in specifically their work context, whereas the other scales report on the variables measured more within an individual context. The FAWS-SF was also developed in and for a South African work context.

Workplace Evaluation Questionnaire (WEQ) is a slightly adapted version of the Turnover Intention Scale (TIS) of Sjöberg and Sverke (2000). This scale has three items that measure the intention to leave a current occupation. The authors reported a Cronbach alfa coefficient of .83 and the TIS was used by Diedericks (2012) in South African research with participants from the technology industry. The purpose for including the WEQ is in line with the findings of Naidoo, Botha, and Bisschoff (2013) and Van Dick and Wagner (2001) about the high levels of intention to leave the profession by teachers in South Africa.

The PSS, COPE and WEQ are in the public domain and available for research, but the FAWS had to be obtained from the authors.

Data analysis

The Mplus 8.3 statistical program (Muthén & Muthén, 1998-2019) was used to conduct the data analyses. Furthermore, SPSS24 (IBM Corp. 2018) was used to compute the descriptive statistics and to analyse indirect effects. Confirmatory factor analysis (CFA) was used to test

the measurement and structural models. The maximum likelihood estimation with robust standard errors (MLR) was used as an estimator.

Model fit was assessed using commonly used goodness-of-fit indices and information criteria: the chi-square statistic (the test of absolute fit of the model), standardised root mean residual (SRMR), root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI) and comparative fit index (CFI) (West, Taylor, & Wu, 2012). For TLI and CFI values to be acceptable, scores higher than .90 are required, while values larger than .95 indicate excellent fit. Both RMSEA and SRMR values lower than .08 indicate a close fit between the model and the data.

Changes in RMSEA, CFI and TLI (greater than .01) were studied to compare models (Chen, 2007). Because of the free estimation of cross-loadings, indicators that include a correction for parsimony, that is, TLI, the Akaike information criterion (AIC) and the Bayes information criterion (BIC) were used (Wang & Wang, 2012). The lowest AIC and BIC values indicate the best-fitting model (Kline, 2010). Point estimate reliability (ρ) was computed for each scale (Raykov, 2009). To determine whether any relationships were indirectly affected by independent variables, the procedure explained by Hayes (2018) was used.

Ethical Considerations

The Humanities and Health Research Committee (HHREC) of the North-West University (NWU-HS-2017-0026) granted ethical approval for the study. All criteria required for ethics research as set out by the HHREC and other ethics policies and guidelines, were strictly adhered to in this study.

Results

In the following section, the results of this investigation into teachers' stress, coping, mental health at work and intention to leave the profession, will be described.

Testing the measurement model

By means of CFA, an eight-factor measurement model was tested. Survey items served as indicators of latent variables and the model was made up of the following variables: (1) mental health, a second order latent variable with three first order latent variables: emotional well-being (measured by three items); psychological well-being (measured by nine items); and social well-being (measured by five items); (2) Negative stress a first order latent

variable with six items; (3) Positive stress, a first order latent variable with four items; (4) Active coping, a first order latent variable with seven items; (5) Denial, a first order latent variable with four items; (6) Social support, a first order latent variable with five items; (7) Self-blame a first order latent variable with two items; (8) Intention to leave, a first order latent variable with three items. Correlations were allowed among the latent variables of the measurement model.

The measurement model was tested for best statistical fit and compared with competing models. Table 1 shows the fit statistics of the six models.

Table 1

Fit Statistics of Competing Measurement Models

Model	χ^2	*df*	TLI	CFI	RMSEA		SRMR	AIC	BIC
1	1813.9*	1144	.87	.88	.05	[.05, .06]	.07	26146.8	26751.8
2	1719.2*	1096	.87	.88	.05*	[.05, .06]	.07	25739.6	26334.6
3	1618.4*	1049	.88	.89	.05*	[.05, .06]	.07	25176.9	25761.8
4	1563.9*	1048	.89	.90	.05*	[.04, .05]	.07	25119.1	25707.4
5	1530.9*	1047	.90	.90	.05*	[.04, .05]	.07	25085.9	25677.5
6	1512.7*	1046	.90	.91	.05*	[.04, .05]	.07	25067.7	25662.7

χ^2: chi-square statistic; *df*: degrees of freedom; TLI: Tucker-Lewis index; CFI: comparative fit index; RMSEA: root mean square error of approximation; SRMR: standardised root mean square residual; AIC: Akaike information criterion; BIC: Bayes information criterion.

Table 1 shows that Model 1 did not fit the data well. Item 14 (“I’ve been trying to come up with a strategy about what to do”), which measures active coping, showed a high standardised residual (SR) with item 2 (“I’ve been concentrating my efforts on doing something about the situation I’m in”; (SR = 16.11). Given the misfit, it was decided to remove item 14 from the model. Model 1 resulted in a significant improvement of the AIC and BIC values (ΔAIC = 407.78, ΔBIC = 417.17). However, the fit of Model 2 was also not good: χ^2 = 1719.20, *df* = 1096, TLI = .87, CFI = .88, RMSEA = .05, *p* = .22 [.05, .06], SRMR = .07. Item 3 (“… feel grateful”), which measures emotional well-being, showed a high standardised residual (SR = 7.55) with item 1 (“… feel happy”). Given the misfit, it was

decided to remove item 3 from the model. Model 2 resulted in a significant improvement of the AIC and BIC values (ΔAIC = 562.75, ΔBIC = 572.81). However, the fit of Model 3 was also not good: χ^2 = 1618.38, *df* = 1049, TLI = .88, CFI = .89, RMSEA = .05, *p* = .37 [.05, .06], SRMR = .07.

The modification indices (MIs) showed a high value (MI = 35.71) for items 1 ("… feel happy") and 2 ("… feel particularly interested in something"). It was decided, therefore, to allow an error correlation between these two items to improve the model fit. In Model 5, the errors of items 1 and 2 were allowed to covary. The fit of Model 5 again improved significantly (ΔAIC = 33.22, ΔBIC = 29.88). The model showed acceptable fit on five of the six indices: χ^2 = 1530.94, *df* = 1047, TLI = .90, CFI = .90, RMSEA = .05, *p* = .83 [.05, .05], SRMR = .07.

The MIs showed a high value (MI = 19.20) for items 19 ("… feel this organisation is becoming a better place for people like you") and 21 ("… feel that the way your organisation works, makes sense to you"). It was decided, therefore, to allow an error correlation between these two items to improve the model fit. In Model 6, the errors of items 19 and 21 were allowed to covary. The fit of Model 6 again improved significantly (ΔAIC = 18.17, ΔBIC = 14.82). The model showed acceptable fit on five of the six indices: χ^2 = 1512.66, *df* = 1046, TLI = .90, CFI = .91, RMSEA = .05, *p* = .89 [.05, .05], SRMR = .07. These fit statistics indicate a good statistical fit for the measurement model. Changes in TLI, CFI and RMSEA indicated that the final measurement model was significantly better than the initial model.

Testing the structural model

Table 2 shows the reliabilities and correlations of the latent variables. Reliabilities range from .72 to .92, which shows acceptable internal consistency of the scales used.

The correlation matrix shows theoretically expected significant positive correlations of emotional, psychological and social well-being and the total mental health of teachers in the workplace, with perceived positive stress, active and social support coping strategies. Equally expected significant negative correlations occur for the mental health variables (emotional, psychological, social and total) with negative perceived stress, denial and self-blame coping strategies and the intention to leave the profession variable. Most of the correlations found also had medium to large practical significant effect.

Table 2

Estimated Reliability Coefficients and Correlation for the Latent Variables (N=209)

Variable	ρ	EWB	PWB	SWB	MHC	NSTRESS	PSTRES	ACTIVE	DENIAL	SOCSUP	SELFB
NSTRES	.88	-.46**+	-.47**+	-.46**+	-.48**+						
PSTRES	.77	.49**+	.51**++	.50**++	.52**++	-.69**++					
ACTIVE	.84	.22**	.23**	.23**	.24**	.10	.19				
DENIAL	.72	-.30**+	-.31**+	-.31**+	-.32**+	.56**++	-.44**+	.06			
SOCSUP	.83	.06	.06	.06	.06	.18*	-.00	.48**+	.17		
SELFB	.74	-.31**+	-.32**+	-.32**+	-.33**+	.59**++	-.49**+	-.07	.63**++	.03	
ITL	.81	-.71**++	-.73**++	-.72**++	-.75**++	.50**++	-.43**+	-.03	.32**+	-.05	.27**

Note: * $p < .05$; ** $p < .01$; + $r > .30$ practically significant (medium effect); ++ $r > .50$ practically significant (large effect)

The measurement model served as the basis for the testing competing structural models. The fit statistics of the structural model were as follows: χ^2 = 1519.45, *df* = 1050, *p* > .01; CFI = .91, TLI = .90, RMSEA = .05, *p* = .89 [.04, .05]; SRMR = .07. The standardised regression coefficients, standard errors and statistical significance of the variables in the structural model are reported in Table 3.

Table 3

Standardized Path Coefficients

Dependent variable	Independent variable	β	SE	Est/SE	*P*
Mental health	Positive stress	.25	.13	1.86	.06
	Negative stress	-.33	.14	-2.43	.02*
	Active coping	.21	.10	1.98	.05*
	Denial	-.07	.12	-.62	.53
	Social support	.04	.09	0.39	.69
	Self-blaming	.05	.14	0.34	.74
Intention to leave	Mental health	-.68	.08	-8.84	.00**
	Positive stress	.10	.11	0.93	.35
	Negative stress	.24	.09	2.62	.01**

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

Table 3 shows that mental health at work is best predicted by low negative stress (β = -0.33, *p* < .05) and active coping. Stress and coping strategies predicted 35% of the variance in mental health. Intention to leave is best predicted by low mental health (β = -0.68, *p* < .01) and high negative stress (β = -0.24, *p* < .01). Mental health and stress predicted 59% of the variance in intention to leave.

Indirect effects

The procedure suggested by Hayes (2018) was followed to investigate the indirect effects of perceived stress on intention to leave via mental health at work. Bootstrapping is used to generate an empirically derived representation of the sampling distribution of the indirect effect and this representation is used for the construction of confidence intervals. Bootstrapping was used to construct two-sided bias-corrected 95% confidence intervals (CIs) to evaluate indirect effects using 10 000 bootstrap samples (see Table 4). The confidence intervals indicate the values between which lower and upper values of the indirect effect

varied in 95% of the 10 000 computed bootstrap estimates. If the confidence interval is above zero, the indirect effect is positive. If the confidence interval is below zero, the indirect effect is negative. There is clear evidence that the indirect effect is positive (or negative) to a "statistically significant" degree if the confidence interval does not include zero (Hayes, 2018, p. 101).

Table 4

Indirect Effects of Stress on Intention to Leave via Mental Health

Variable	Intention to leave	
	β	95% CI
Negative stress	.23 (.12)	[.01, .42]
Positive stress	-.17 (.13)	[-.43, .02]

** $p < .01$

Table 4 shows that negative stress indirectly and positively affected intention to leave (β = .23 [.01, .42], $p < .01$) via mental health. Therefore, it seems that negative stress negatively affects mental health, which in turn leads to higher intention to leave.

Discussion

This research aimed at investigating the relationships between teachers' perceived stress, coping strategies, mental health and intention to leave the teaching profession. The results reported above indicated that the aims were met and the most important findings were as follows: first, measurement and structural models were identified that were tested and showed good statistical fit. By means of the best fitting structural model, all further statistical analyses were performed. Secondly, reliability indices were calculated and showed acceptable factor reliabilities, while significant correlations between the factors also showed medium to high practical effect. Thirdly, regression coefficients found that mental health of teachers was predicted by low negative stress and by active coping. Fourthly, regression coefficients found that intention to leave the profession was predicted by low mental health and by high negative stress. Lastly, indirect effects were found showing that negative stress indirectly and positively affected the intention to leave the teaching profession through mental health.

The factors' reliabilities range from .72 for denial coping to .92 for psychological well-being and can be considered acceptable. These indices corresponded with those reported in

the literature for the same measurements (Hamad, Fernald, Karlan, & Zinman, 2008; Diedericks, 2012; Louw & Viviers, 2010; Rautenbach & Rothmann, 2017).

The correlations found made theoretical sense with the mental health total score and the sub-scales (EWB, PWB, SWB) correlating significantly positively with positive stress and active coping and positive stress correlating significantly positively with active coping. Conversely, the mental health total score and sub-scales correlated significantly negatively with negative stress, denial coping, self-blame coping and the intention to leave the profession and positive stress correlated significantly negatively with negative stress, with denial and self-blame coping and with intention to leave the profession. Negative stress correlated significantly positively with denial and self-blame coping and with intention to leave the profession. The particularly high negative correlations of the mental health at work scales (MHC, EWB, PWB, SWB) with the intention to leave the profession (-.71 to -.75) were interesting, as were the practically significant medium and large effect sizes found for most of the correlation indices.

Effect size, introduced by Cohen (1988) to psychological research, describes indices that measure the magnitude of research effects and explain the practical significance of research results. Effect size focuses on the meaning of the results and enables comparison between studies and/or practical applications (interventions) of research results (Kotrlik, Williams & Jabor, 2011). The American Psychological Association (APA, 2009, p. 34) states that for the reader to appreciate the magnitude or importance of a study's findings, it is almost always necessary to include some measure of effect size in the results section. Cohen's (1988) practical significant effect sizes are $r > .30$ as medium effect and $r > .50$ as large effect.

The findings of this research showed no practical effect size in the correlations of active coping with mental health at work, perceived stress or intention to leave, which is theoretically surprising and could warrant further research. The medium to strong practical effect found between mental health at work and positive work stress may imply that teachers in this group who feel good and function well at work (positive mental health) are able to perceive and appraise the demands made on them as manageable (positive stress) (Antonovsky, 1987; Frazier, 2002; Tugade & Fredrickson, 2004). Conversely, the medium practical effect sizes found between mental health at work and negative work stress may imply the opposite tendency, that teachers who are more mentally distressed experience the work demands as over demanding (negative stress) (Goddard & Goddard, 2006).

Furthermore, teachers in this group who had low mental health at work and who experience negative work stress, reverted to coping with the demands by using denial and self-blame strategies, as are indicated by the significant medium effect sizes between mental health at work and denial and self-blame as coping strategies and especially the large effect sizes between negative work stress and denial and self-blame coping strategies. Weiten (2013) describes such responses to the experience of severe or prolonged stress as "giving up and blaming oneself" behaviour (p. 547) and relates it to the classic learned helplessness concept of Seligman (1992) and Isaacowitz and Seligman (2001). Learned helplessness refers to passive behaviour as a result of exposure to prolonged aversive events, for which the individual's coping resources have been depleted (Isaacowitz & Seligman, 2001).

Particularly interesting are the large practical significant effect sizes found for mental health (or flourishing) at work dimensions negatively correlating with the intention to leave the profession and, similarly, for the positive correlation of negative work stress with the intention to leave. This seems to indicate that teachers in this group, who had positive mental health at work, were not considering leaving the profession as much as those who were mentally distressed and had negative perceived stress about their work. This finding is in correspondence with that of Barling, Kelloway, and Frone (2005) who found that teachers reporting mental health challenges due to the stress that they experience in the teaching context also tended to take more sick leave and, ultimately, left the teaching profession.

Despite the value that the above explicated findings may have in understanding the teaching circumstances of the participants in this study, Cohen (1988) and Hair, Black, Babin, Anderson, and Tatham (2006), caution that practical effect is the estimate of the degree to which the phenomenon being studied *exists in a particular population* and could be quite different in another context or with another sample. This study could be replicated with a larger group of teachers in other areas and teaching contexts.

The finding that mental health at work is significantly predicted by low work stress and active coping (although a low coefficient) is a reflection of the findings of Seery, Holman, and Silver (2010) who found that the combination of manageable stress and the constructive coping thereof lead to numerous physical and mental benefits. The finding also reminds one of the numerous findings about the beneficial and salutary effects of active coping strategies on building stress resistance, resilience, psychological buffers against mental symptoms and features of health in general (Aspinwall, 2011; Folkman & Moskowitz, 2004; Park, 2011; Taylor, 2011).

Intention to leave the teaching profession was found to be predicted by low mental health at work and high negative work stress. This finding corresponds with those of Goddard and Goddard (2006) and Skaalvik and Skaalvik (2011) who found that high levels of work stress were associated with *emotional exhaustion* (low mental health) and that both these factors were associated with the intention to leave the teaching profession. The classic phenomena of the fight or flight response (McCarty, 2007) and the general adaptation syndrome (Baffy, 2017) come to mind, wherein it could be speculated that some teachers have become so stress saturated that they enter into the exhaustion phase of the general adaptation syndrome, which revives the alarm phase, that is essentially the *fight or flight response* or intention to leave the profession (Weiten, 2013).

Furthermore, the finding of indirect effects analysis in this research, that negative work stress indirectly and positively influences the intention to leave via mental health at work and that negative work stress seem to negatively impact on mental health at work, which then leads to the intention to leave the profession, agrees with the work of Skaalvik and Skaalvik (2011). These researchers found that emotional exhaustion mediated the relationship between job stress, satisfaction and the intention to leave of teachers. Emotional exhaustion, as a direct consequence of high levels of stress in the workplace, has been found by various researchers, amongst others Goddard and Goddard (2006) and Von der Embse, Kilgus, Solomon, Bowler, and Curtis (2015).

The above mentioned two findings regarding the prediction of the intention to leave the profession by low mental health and negative stress and of indirect effects of negative stress through mental health on the intention to leave, both strongly remind one of the burnout phenomenon studied in occupational psychology. Maslach (2003) and Maslach, Schaufeli and Leiter (2001) were the original authors who conceptualised the burnout construct and theory and they described symptoms of burnout as physical exhaustion, emotional exhaustion, mental and attitudinal exhaustion and feelings of low personal accomplishment. They and other researchers have found in research on burnout, that work stress is the main cause of burnout (Ahola, et al., 2006).

Finally, the burnout symptoms mentioned above and the symptoms of low mental health (languishing) brought about by the negative perceived stress of teachers in this study, are similar and *burnout* has been extensively found to be associated with the intention to leave the profession of teachers (Lee, 2017; Spittle, Kremer & Sullivan, 2015). It could therefore be concluded that the intention to leave the profession of teachers participating in

this research is strongly influenced by the low mental health or *burnout* that they have, as a result of the high levels of perceived negative stress that they experience in the educational context. Maslach et al. (2001) succinctly described these experiences of teachers as "an erosion of engagement. What started out as important, meaningful and challenging work becomes unpleasant, unfulfilling and meaningless" (p. 416).

The results of this study that were discussed above call for further research and although the aims of the study were met, there were some limitations.

Limitations and Recommended Future Research

For the majority of teachers who participated in this research, English was not their home language and yet they agreed to complete the English questionnaires presented to them. Future research of the same nature is recommended, but with questionnaires translated into the first language of the respondents.

Although the quantitative research design of this study reached the research aims successfully and yielded interesting results, mixed method studies of the phenomena investigated are recommended. Deeper and qualitative perspectives on some of the results of this study were lacking and could have added other dynamics to the interpretation of the findings.

The medium to large practical effect sizes found for most of the correlations between latent variables were surprising and seemingly gave some perspective on the work context of the participants in this study. However, practical effect sizes only have bearing on a sample in a specific context therefore, it is recommended that this research be replicated in other teaching contexts with larger numbers of participants. Thereby, comparisons of studies according to the practical effect sizes obtained for them could be done in order to obtain some indication of a bigger picture of stress, coping, mental health at work and the intention to leave the profession, of teachers in South Africa.

In further research, the effect of active coping on teachers' perceived stress, mental health at work and intention to leave could be done. It was surprising that in the current findings, active coping seemed to be less of a factor than denial- and self-blame coping strategies, although active coping was a weak but significant predictor of mental health at work.

Conclusion

The study aimed at investigating the statistical relationships between teachers' perceived stress in the educational context, their coping strategies, mental health at work and their intention to leave the teaching profession. The research was successful in reaching the aims thereof and found theoretically expected, statistically significant associations between the constructs that also seemed to have practically significant meaning, relevant to the group of teachers involved and their particular teaching context.

References

Ahola, K., Konkonen, Y.. Kivimaki, M., Virtanen, M., Isometsa, E., Aromaa, A. & Lonnqcist, J. (2006). Contribution of burnout to the association between job strain and depression: The Health 2000 Study. *Journal of Occupational and Environmental Medicine, 48,* 1023–1030.

Aldwin, C. (2011). Stress and coping across the lifespan. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 15–34). Oxford, United Kingdom: Oxford University Press.

Alhija, F. N. A. (2015). Teacher stress and coping: The role of personal and job characteristics. *Procedia-Social and Behavioral Sciences*, *185*, 374–380.

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

Antonovsky, A. (1984). The sense of coherence as a determinant in health. In J. D. Matarazzo (Ed.), *Behavioral health: A handbook of health enhancement and disease prevention* (pp. 114–129). New York, NY: John Wiley.

Aspinwall, L.G. (2011). Future-oriented thinking, proactive coping and the management of potential threats to health and well-being. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 334–365). Oxford, United Kingdom: Oxford University Press.

Avci, A., Bozgeyikli, H., & Kesici, S. (2017). Psychological needs as the predictor of teachers' perceived stress levels. *Journal of Education and Training Studies*, *5*(4), 154–164.

Baffy, G. (2017). General adaptation syndrome. *Encyclopedia of Personality and Individual Differences*, 1-5.

Baqutayan, S. M. S. (2015). Stress and coping mechanisms: A historical overview. *Mediterranean Journal of Social Sciences*, *6*(2 S1), 479.

Barling, J., Kelloway, E. K. & Frone, M. R. (2005). *Handbook of work stress.* Thousand Oaks, CA: SAGE Publications, Inc.

Berryhill, J., Linney, J. A., & Fromewick, J. (2009). The effects of education accountability on teachers: Are policies too-stress provoking for their own good? *International Journal of Education Policy and Leadership*, *4*(5), 1–14.

Baloyi, L., & Ramose, M. B. (2016). Psychology and psychotherapy redefined from the viewpoint of the African experience. *Alternation Journal*, *18*, 12–35.

Bones, K. R., Pérez, K., Rodriguez-Sanz, M., Borrell, C., & Obiols, J. E. (2010). Prevalence of mental health problems and their association with socioeconomic, work and health variables: Findings from the Spain national health survey. *Psicothema*, *22*(3), 389–395.

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research, 78*(3), 367–409.

Brown, M., Ralph, S., & Brember, I. (2002). Change-linked work-related stress in British teachers. *Research in Education*, *67*(1), 1–12.

Brown, S. P., Westbrook, R. A., & Challagalla, G. (2005). Good cope, bad cope: adaptive and maladaptive coping strategies following a critical negative work event. *Journal of Applied Psychology*, *90*(4), 792–798.

Brownell, M. T., Smith, S. W., McNellis, J. R., & Miller, M. D. (1997). Attrition in special education: Why teachers leave the classroom and where they go. *Exceptionality*, *7*(3), 143–155.

Cancio, E. J., Larsen, R., Mathur, S., Estes, M. B., Johns, B., & Chang, M. (2018). Special education teacher stress: Coping strategies. *Education and Treatment of Children*, *41*(4), 457–482.

Carver, C. S. (1997). You want to measure coping but your protocols too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, *4*(1), 92–100.

Chaaban, Y., & Du, X. (2017). Novice teachers' job satisfaction and coping strategies: Overcoming contextual challenges at Qatari government schools. *Teaching and Teacher Education, 67*, 340–350.

Chan, D. W. (2006). Emotional intelligence and components of burnout among Chinese secondary school teachers in Hong Kong. *Teaching and Teacher Education, 22*(8), 1042–1054.

Chaplain, R. P. (2008). Stress and psychological distress among trainee secondary teachers in England. *Educational Psychology*, *28*(2), 195–209.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(3), 464–504.

Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology*, *11*(3), 421–437.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Orlando, FL: Academic Press.

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapam & S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology* (pp. 31–67). Newbury Park, CA: Sage.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385–396.

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social–emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of educational psychology*, *104*(4), 1189-1204.

Cramer, P. (2000). Defense mechanisms in psychology today: Further processes for adaptation. *American Psychologist*, *55*(6), 637-646.

Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of Teacher Education*, *61*(1-2), 35–47.

Devi, P. S. (2017). *Research methodology: A handbook for beginners*. New York, NY: Norton Press.

Diedericks, E. (2012). *Flourishing of employees in the information technology industry in South Africa.* (Unpublished doctoral thesis). North-West University, Vaal Triangle, Vanderbijlpark, South Africa.

Diener, E., & Lucas, R. E. (1999). Personality and subjective well-being. In D Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213–229). New York, NY: Russel Sage Foundation.

Eaton, W. W., Anthony, J. C., Mandel, W., & Garrison, R. (1990). Occupations and the prevalence of major depressive disorder. *Journal of Occupational Medicine, 32*, 1079–1087.

eNCA, (2015, November 6). *Record number of resignations hit the public sector*. Retrieved from www.enca.com.

Folkman, S., & Moskowitz, J.T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology,55,* 745–774.

Frazier, L. D. (2002). Stability and change in patterns of coping with Parkinson's disease. *The International Journal of Aging and Human Development*, *55*(3), 207–231.

Goddard, R., & Goddard, M. (2006). Beginning teacher burnout in Queensland schools: Associations with serious intentions to leave. *The Australian Educational Researcher*, *33*(2), 61–75.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, *26*(3), 463–488.

Griffith, J., Steptoe, A., & Cropley, M. (1999). An investigation of coping strategies associated with job stress in teachers. *British Journal of Educational Psychology*, *69*(4), 517–531.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis.* Upper Saddle River, NJ: Pearson Prentice Hall.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health*, *62*(6), 538–544.

Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, *85*(1), 4–40.

Henry, G. T., Bastian, K. C., & Fortner, C. (2011). Stayers and leavers: Early-career teacher effectiveness and attrition. *Educational Researcher*, *40*(6), 271–280.

Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions*, *20*(2), 90–100.

Holahan, C. J., & Moos, R. H. (1994). Life stressors and mental health: Advances in conceptualizing stress resistance. In W. R. Avinson & I. H. Godlib (Eds.), *Stress and mental health*: Contemporary issues and prospects for the future (pp. 213–238). New York, NY: Plenum.

IBM Corp. (2018). *IBM SPSS statistics: Version 25*. Armonk, NY: IBM Corp.

Inter-Agency Network for Education in Emergencies. (2011). *INEE thematic issues brief: Psychosocial well-being*. Retrieved from http://www.ebookbrowse.com/inee-thematic-issue-brief-psychosocial-pdf-d82613712.

Isaacowitz, D. M., & Seligman, M. E. P. (2001). Is pessimism a risk factor for depressive mood among community-dwelling older adults? *Behaviour Research and Therapy*, *39*(3), 255–272.

Jackson, L. T. B., & Rothmann, S. (2005). Work-related well-being of educators in a district of the North West Province. *Perspectives in Education*, *23*(3), 107–122.

Jackson, L. T., Rothmann, S., & Van de Vijver, F. J. (2006). A model of work- related well-being for educators in South Africa. *Stress and Health*, *22*(4), 263–274.

Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology*, *20*(2), 178–187.

Joshanloo, M., Wissing, M. P., Khumalo, I. P., & Lamers, S. M. (2013). Measurement invariance of the Mental Health Continuum-Short Form (MHC-SF) across three cultural groups. *Personality and Individual Differences*, *55*(7), 755–759.

Kahumuza, J., & Schlechter, A. F. (2008). Examining the direct and some mediated relationships between perceived support and intention to quit. *Management Dynamics: Journal of the Southern African Institute for Management Scientists*, *17*(3), 2–19.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, *43*(2), 207–222.

Keyes, C. L. M. (2004). The nexus of cardiovascular disease and depression revisited: The complete mental health perspective and the moderating role of age and gender. *Aging and Mental Health*, *8*(3), 266–274.

Keyes, C. L. M. (2005). Chronic physical conditions and aging: Is mental health a potential protective factor? *Aging International*, *30*(1), 88–104.

Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing. A complementary strategy for improving national mental health. *American Psychologist*, *62*(2) 95–108.

Keyes, C. L. M. (2013). Protecting and promoting positive mental health: Early and often throughout the lifespan. In C. L. M. Keyes (Ed.), *Mental well-being: International contributions to the study of positive mental health* (pp. 3-28). Dordrecht, The Netherlands: Springer.

Keyes, C. L. M., & Lopez, S. J. (2002). Toward a science of mental health: Positive directions in diagnosis and interventions. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 45–59). New York, NY: Oxford University Press.

Keyes, C. L. M., Wissing, M. P., Potgieter, J. P., Temane, Q. M., Kruger, A., & Van Rooy, S. (2008). Evaluation of the mental health continuum short form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology and Psychotherapy, 15*(3) 181–192.

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of personality and social psychology, 82*(6), 1007–1022.

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.

Koen, V., Van Eeden, C., & Rothmann, S. (2013). A model for psychosocial well-being of families in a South African context. *Journal of Psychology in Africa, 23*(1), 155–164.

Kotrlik, J. W., Williams, H. A., & Jabor, M. K. (2011). Reporting and Interpreting Effect Size in Quantitative Agricultural Education Research. *Journal of Agricultural Education, 52*(1), 132–142.

Kyriacou, C. (1987). Teacher stress and burnout: An international review. *Educational Research, 29*(2), 146–152.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27–35.

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine, 55*(3), 234–247.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Lee, Y.H. (2017). Emotional labour, teacher burnout and turnover intention in high school physical education teaching. *European Physical Education Review, XX(X),* 1-18. DOI:10.1177/1356336X17719559/journals.sagepub.com/home/epe.

Linley, A., & Joseph, S. (2004). Toward a theoretical foundation for positive psychology in practice. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 713-731). Englewood Cliffs, NJ: Wiley.

Liu, S., & Onwuegbuzie, A. J. (2012). Chinese teachers' work stress and their turnover intention. *International Journal of Educational Research*, *53*, 160–170.

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on the wellbeing and performance of educators: A systematic review of the empirical literature. *Teaching and Teacher Education*, *61*, 132–141.

Louw, G. J., & Viviers, A. (2010). An evaluation of a psychosocial stress and coping model in the police work context. *SA Journal of Industrial Psychology*, *36*(1), 1–11.

Mansfield, C. F., Beltman, S., Broadley, T., & Weatherby-Fell, N. (2016). Building resilience in teacher education: An evidenced informed framework. *Teaching and Teacher Education, 54*, 77–87.

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science, 12,* 189-192.

Maslach, C., Shaufeli, W., & Leiter, M. (2001). Job burnout. *Annual Review of Psychology, 52*, 397–422.

McCarthy, J. (2007). A framework for healing from loss: A further integration of psychodynamic and social work theory. *Journal of Human Behavior in the Social Environment*, *14*(3), 45–79.

Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education/Revue Canadienne De L'éducation*, *28*(3), 458–486.

Moos, R. H., & Schaefer, J. A. (1993). Coping Resources and Processes: Current Concepts and Measures. In L. Goldberger, & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 234–257). New York, NY: The Free Press.

Moss, C. A. (2008). Power of the five elements: path to healthy aging and stress resistance. Retrieved from http://northatindiabooks, wordpress.com

Muthén, L. K., & Muthén, B. O. (1998-2019). *Mplus users' guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Naidoo, K., Botha, C. J., & Bisschoff, C. A. (2013). Causes of stress in public schools and its impact on work performance of educators. *Journal of Social Sciences*, *34*(2), 177–190.

Nasser, F.A.A. (2015). Teacher stress and coping: The role of personal and job characteristics. *Procedia – Social and Behavioral Sciences, 185*, 374–380.

Nkosi, B. (2015, April 8). Motshekga blocks re-employment of thousands of teachers. *Mail & Guardian.* Retrieved from http://mg.co.za/article/2015-04-08.

Park, C.L. (2011). Meaning, coping and health and well-being. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 227–241). Oxford, United Kingdom: Oxford University Press.

Park, J., & Kim, T. (2009). Do types of organizational culture matter in nurse job satisfaction and turnover intention? *Leadership in Health Services*, *22*(1), 20–38.

Papathanasiou, I. V., Tsaras, K., Neroliatsiou, A., & Roupa, A. (2015). Stress: Concepts, theoretical models and nursing interventions. *American Journal of Nursing Science*, *4*(2-1), 45–50.

Peterson, C. (2006). *A primer in positive psychology.* Oxford, United Kingdom: Oxford University Press.

Pisanti, R., Gagliardi, M. P., Razzino, S., & Bertini, M. (2003). Occupational stress and wellness among Italian secondary school teachers. *Psychology and Health*, *18*(4), 523–536.

Prilleltensky, I., Neff, M., & Bessell, A. (2016). Teacher stress: What it is, why it's important, how it can be alleviated. *Theory into Practice*, *55*(2), 104–111.

Rasku, A., & Kinnunen, U. (2003). Job conditions and wellness among Finnish upper secondary school teachers. *Psychology and Health*, *18*(4), 441–456.

Rautenbach, C., & Rothmann, S. (2017). Psychometric validation of the Flourishing-at-Work Scale–Short Form (FWS-SF): Results and implications of a South African study. *Journal of Psychology in Africa*, *27*(4), 303–309.

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development*, *42*(3), 223–232.

Raykov, T. (2009). Interval estimation of revision effect on scale reliability via covariance structure analysis. *Structural Equation Modeling, 16*, 539–555.

Reber, A. S., & Reber, E. S. (2001). *Dictionary of psychology* (3rd ed.). London, United Kingdom: Penguin Books.

Redelinghuys, J. J. K. (2016). *Flourishing of teachers in secondary schools* (Doctoral dissertation, North-West University (South Africa), Vaal Triangle Campus).

Rhodes, S. R., & Doering, M. M. (1993). Intention to change careers: Determinants and process. *The Career Development Quarterly*, *42*(1), 76–92.

Richards, K. A., Levesque-Bristol, C., Templin, T. J., & Graber, K. C. (2016). The impact of resilience on role stressors and burnout in elementary and secondary teachers. *Social Psychology of Education*, *19*(3), 511–536.

Rothmann, S. (2013). From happiness to flourishing at work: A Southern African perspective. In M. P. Wissing (Ed.), *Well-being research in South Africa, Cross-cultural advances in positive psychology* (pp. 123–151), Dordrecht, The Netherlands: Springer.

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081.

Seery, M. D., Holman, E. A., & Silver, R. C. (2010). Whatever does not kill us: cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology*, *99*(6), 1025–1041.

Schonfeld, I. S., Bianchi, R., & Luehring-Jones, P. (2017). Consequences of job stress for the psychological well-being of teachers. In T. M. McIntyre, S. E. McIntyre, & D. J. Francis (Eds.), *Educator stress - An occupational health perspective* (pp. 55–75). Cham, Switzerland: Springer International Publishing.

Seligman, M. E. P. (1992). *Helplessness: On depression, development, and death.* San Francisco, CA: Freeman.

Sjöberg, A. & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 68*, 653–663.

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and teacher education*, *27*(6), 1029–1038.

Spittle, M., Kremer, P. & Sullivan, S. (2015). Burnout in secondary school physical education teaching. *Series: Physical Education and Sport, 13*, 33-43.

Steinhardt, M. A., Smith Jaggars, S. E., Faulk, K. E., & Gloria, C. T. (2011). Chronic work stress and depressive symptoms: Assessing the mediating role of teacher burnout. *Stress and Health*, *27*(5), 420–429.

Steyn, G. M., & Kamper, G. D. (2006). Understanding occupational stress among educators: an overview. *Africa Education Review*, *3*, 113–133.

Taylor, S.E. (2011). Affiliation and stress. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 86–100). Oxford, United Kingdom: Oxford University Press.

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta- analytic findings. *Personnel psychology*, *46*(2), 259–293.

Tran, V. D. (2016). Coping styles with student misbehavior as mediators of teachers' classroom management strategies. *International Journal of Higher Education*, *5*(1), 1–10.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, *86*(2), 320–333.

Van Dick, R., & Wagner, U. (2001). Stress and strain in teaching: A structural equation approach. *British Journal of Educational Psychology*, *71*(2), 243–259.

Vaughn, A. A., & Roesch, S. C. (2003). Psychological and physical health correlates of coping in minority adolescents. *Journal of Health Psychology*, *8*(6), 671–683.

Von der Embse, N. P., Kilgus, S. P., Solomon, H. J., Bowler, M., & Curtiss, C. (2015). Initial development and factor structure of the Educator Test Stress Inventory. *Journal of Psychoeducational Assessment*, *33*(3), 223–237.

Wang, J., & Wang, X. (2012). *Structural equation modeling: Applications using Mplus.* Chichester, United Kingdom: Wiley.

Weiten, W. (2013). *Psychology: Themes and variations* (9th ed). Belmont, CA: Wadsworth, Cengage Learning.

Wentzel, K. R. (2010). Students' relationships with teachers. In J. L. Meece, & J. S. Eccles (Eds.), *Handbook of research on schools, schooling, and human development* (pp. 75–91). New York, NY: Routledge

West, S. G., Taylor, A. B., & Wu, W. (2012). Model fit and model selection in structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 209–231). New York, NY: The Guilford Press.

Wissing, M. P., & Van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. *South African Journal of Psychology*, *32*, 32–44.

Chapter 4

Manuscript 3

Teachers' perceived stress, mental health, perceived personal control: the effects thereof on flourishing at work

Keywords: flourishing, mental health, perceived personal control, stress, teacher stress

Abstract

In this study, teachers' stress and mental health, the effects thereof and of their perceived personal control on their flourishing at work, were investigated. A convenience sample of teachers (n = 209) in the Sedibeng East District in South Africa participated. The statistical analyses were done in three phases with the following aims: a) to identify and test a measurement and structural model with both cross sectional and longitudinal data and to determine the descriptive statistics, reliabilities and correlations of the factors (phase 1); b) to identify latent profiles on scores of participants on the perceived personal control (PPC) scale, to test measurement invariance between the identified profiles and to estimate the mean of a distal continuous outcome across latent profiles, by means of BCH (phase 2); c) to determine the indirect effects of perceived stress through mental health on flourishing at work (phase 3). Data were obtained by means of the Perceived Stress Scale, the Mental Health Continuum, The Perceived Personal Control Scale and the Flourishing at Work Scale. Two latent profiles of personal control were identified and labelled as doubtful personal control and confident personal control. A significant indirect effect was found for negative stress, through mental health on psychological well-being at work. It seems that teachers who experience positive stress are more mentally healthy, which results in them experiencing higher emotional well-being (job satisfaction and positive affect), psychological well-being (autonomy, competence and relatedness satisfaction, learning, meaningful work and work engagement) and social well-being at work over time.

The South African education system has undergone significant changes within recent years. The complexity and intensity of the demands made on teachers and the pace of education transformation are unprecedented and for many South African teachers it seems that teaching has become a stressful, frustrating and unpleasing profession (Boshoff, Potgieter, Ellis, Mentz, & Malan, 2018). Furthermore, teaching is a well-known context for generating many emotional demands as it involves high levels of face-to-face interactions with many stakeholders (Lee, 2017). Yet, despite the negative discourse about the South African teaching situation, there are some teachers who have reported that they are flourishing at work (Redelinghuys, 2016). The ability to cope with the stressful South African education context enables such teachers to manage the stressors that challenge their ability to maintain personal control over given situations (Fishman, 2014). In a working context such as the one sketched above, understanding teachers' state of mental health is important, not only for the objective of supporting them (Gray, Wilcox, & Nodstokke, 2017), but also for the purpose of ensuring quality education (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Louw, George, & Esterhuyse, 2011). This study investigated teachers' stress, mental health and perceived personal control, as well as the effects thereof on their flourishing at work. Following, the constructs of the study are briefly described.

Perceived Stress

The human components of mental health, flourishing and perceived personal control included in this study, share the common dynamic of responding to stress as a ubiquitous facet of human life (Ryff & Singer, 2003). Also, the teaching context is familiar with the stress phenomenon, therefore, being a teacher can be most fulfilling, but also extremely demanding and stressful (Clipa, 2017; Clipa & Boghean, 2015, Kyriacou, 2001). The impact of stress on teachers extends to the classroom environment both academically and behaviourally for teacher and learner (Gray, Wilcox, & Nodstokke, 2017).

Rothi, Leavy, and Lowenthal (2010) view stress as an imbalance between the pressure or demands placed upon an individual and their coping resources. Kassin, Fein and Marcus (2014) describe stress as an unpleasant state of arousal in which the individual perceives the demands made on him/her as taxing and as exceeding their ability to handle or change the demands. These conceptualisations of stress explain why teacher stress is defined as the negative or unpleasant emotional experience of teachers that stem from the demands within their work environment (Kyriacou, 2001) and as the experience of negative emotions such as tension, frustration, anxiety, anger and depression as a result of teaching demands (Sandilos,

Goble, Rimm-Kaufman, & Pianta, 2018). Teaching demands include, amongst others, inadequate teacher support (Cozolino, 2017), learner behaviour (Clipa,, 2017), time pressure and workload (Aldrup, Klasmann, & Ludtke, 2017). Teachers' inability to cope effectively with work-related stress negatively affects their levels of well-being (Roffey, 2012; Vesely, Saklofske, & Nordstokke, 2014), which in turn can affect their personal performance and the learners' well-being, because such teachers often lack a sense of commitment and presence in the classroom (Clipa, 2017). Heightened teacher stress levels can furthermore contribute to the climate of the school and are often related to high levels of staff absenteeism, early retirement and resignation (Grayson & Alvarez, 2008). On the contrary, creating a classroom atmosphere that encourages learning and development that is beneficial and healthy for both teacher and learners, reduces stress experiences and improves flourishing (Gray, Wilcox, & Nordstokke, 2017; McCallum & Price, 2010). Ryff and Singer (2003) state that it is during stress or challenge that people's strengths are most clear, while Taylor (2011) found that positive personal capabilities under adversity stem from psychosocial resources and lead to resilience and health. In this research, the perceived stress model of Cohen and Williamson (1988) will be used.

Mental Health

Teaching is consistently described as a demanding, sometimes dissatisfying profession. At their best, teachers act as role models who inspire learners, build their confidence, encourage them to learn and develop to their utmost ability and enable them to reach their full potential (Grenville-Cleave & Boniwell, 2012). Unfortunately, the ideal is not always the reality as demotivated, overburdened, stressed-out teachers have a negative influence on learner performance, academic achievement and overall learner behaviour. Outcomes of teachers' mental health struggles range from poor classroom relationships and instructional interactions between teacher and learner, to poor academic performance by learners (McLean & Conner, 2015; McLean, Abry, Taylor, Jimenez, & Granger, 2017).

Mental health is viewed as a moderate to high level of psychological well-being or the absence of mental dysphoria (Singh & Walia, 2004) and includes an individual's ability to enjoy life and to create a balance between life activities and psychological resilience (Gorsy, Panwar & Kumar, 2015). The World Health Organization (2004) views mental health as a state of well-being where individuals successfully cope with normal stresses of life enabling them to work productively and contribute to their community. More recently, Galderisi, Heinz, and Kostrup (2015, p. 232) elaborated on the WHO conceptualisation and described

mental health as “a dynamic state of internal equilibrium that enables individuals to use their abilities in harmony with universal values of society”. They explained that components of mental health that contribute to the internal equilibrium are basic cognitive and social skills, an ability to recognise, express and regulate one’s emotions and to have empathy with others, the flexibility to deal with life’s adversities, to function in social roles and to have a harmonious relationship between body and mind (see Galderisi, Heinz & Kostrup, 2017).

Currently, a well-researched conceptualisation of mental health is that of Keyes (2007) who distinguished between mental health as flourishing or languishing on a continuum of complete mental health. Keyes (2007) states that mental health is characterised by emotional, psychological and social well-being that manifests in feeling good and functioning well behaviour. Specifically, Keyes conceptualises emotional mental health as having predominantly positive emotions, life satisfaction and a keen interest in life. Psychological health is characterised by acceptance of oneself, autonomy or self-directedness, personal growth and self-development, healthy and reciprocally satisfying relationships with others, a sense of mastery of one’s environment and a strong sense of purpose in life. Social mental health, according to the Keyes model (2006), comprises a general sense of social coherence and actualisation, of feeling accepted by and belonging to one’s community and the ability to contribute to the community in a reciprocally meaningful way.

Stable mental health is critical for teachers to successfully complete work-related tasks, since they are confronted with various demands and challenges that include expectations to effectively manage classrooms and achieve academic success (Gray, Wilcox, & Nodstokke, 2017). Teaching tasks are becoming increasingly more challenging due to multidimensional and diverse educational needs of learners, learner to teacher ratios, constantly changing learning curriculum and further demands added to the workload. Considering these occupational demands, it is not surprising that teachers experience significantly high levels of stress that might result in burnout or mental ill-health, including psychosomatic symptoms such as headaches, hypertension, muscle tension (Renshaw, Long, & Cook, 2015), exhaustion, depression and obesity (Parray, Kumar, & Awasthi, 2016). In this study, the Keyes (2002, 2004, 2006, 2007) model of complete mental health was used to conceptualise teachers’ mental well-being, in which flourishing is a core construct.

Flourishing at Work

To ensure quality education requires a motivated, healthy, committed, competent and well-functioning teaching corps (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Louw, George, & Esterhuyse, 2011), in other words, a teaching corps that could be described as feeling and functioning well or flourishing at work (Rautenbach, 2015; Redelinghuys, Rothmann, & Botha, 2019).

To flourish means to experience emotional, psychological and social well-being (Keyes, 2007) or as Seligman (2011) proposes, to have positive emotions, engagement in life tasks, healthy relationships, meaning and purpose in life and a sense of achievement. Flourishing at work is described as an employee's desirable mental and physical condition or state of well-being, expressed through positive work experiences and effective management of work-related factors. When employees flourish, they display a wide range of positive work-related attitudes (Redelinghuys, Rothmann, & Botha, 2019). Rautenbach and Rothmann (2017) conceptualised flourishing at work as an application of the flourishing construct of Keyes (2002, 2004, 2006, 2007), with the components of emotional, psychological and social well-being related to the workplace, although Rothmann (2013) deviates from Keyes' (2002; 2005) model to include different sub-dimensions of emotional well-being (EWB), psychological well-being (PWB) and social well-being (SWB), making it more work related. Rautenbach and Rothmann's (2017) Flourishing at Work Scale – Short Form (FAWS-SF) assesses three dimensions, namely emotional well-being with three sub-dimensions of positive affect, negative affect and job satisfaction, psychological well-being with six sub-dimensions of autonomy satisfaction, competence satisfaction, relatedness satisfaction, learning, meaningful work and engagement and social well-being with five sub-dimensions of social acceptance, social actualisation, social contribution and social integration (Rautenbach & Rothmann, 2017). Rothmann (2013) found that job-contextual factors o flourishing at work, better predicted organisational outcomes than flourishing in general (Redelinghuys, 2016). For the purposes of this study, Rothmann's (Rautenbach & Rothmann, 2017) adapted model of the Keyes Mental Health Continuum will be used.

Positive mental health (flourishing) is associated with better general and work functioning, with those individuals who are flourishing reporting lower absenteeism from work, high morale, job satisfaction and other indicators (Keyes, 2002). In general, psychological well-being as a dimension of workplace flourishing can be seen as an individual's sense of personal and professional fulfilment, satisfaction, purposefulness and

happiness, constructed in a collaborative process with colleagues (Rautenbach & Rothmann, 2017; Soini, Pyhälto, & Pietarinen, 2010). Within the educational context, such a flourishing promoting process is supported by contextual factors that enable teachers to realise their purpose and goals in teaching, that provide realistic and manageable work demands, that value, respect and celebrate teachers' professional expertise and work competence (Acton & Glasgow, 2015). When teachers believe that work-related challenges and problems are beyond their control (Bandura, 1997; Ryan & Deci, 2000; Thompson, 2002), their flourishing will be unfavourably impacted. Conversely, the ability to foster and maintain their well-being and flourishing at work and to have a sense of perceived personal control over work demands may have a positive impact on teachers' performance and transform them from surviving to thriving (Grenville-Cleave & Boniwell, 2012).

Perceived Personal Control

Perceived personal control can broadly be defined as the belief in one's ability to exert control over situations or events and to influence the outcomes (Ly, Wang, Bhanji, & Delgado, 2019). Teachers are continuously confronted with events, situations and adversities that are emotionally, cognitively and physically challenging and that influence their ability to function optimally within their given work environment. Many teachers, however, find ways to cope by turning to internal strategies, actions and processes that assist them in making sense of the stressful context that they find themselves in and to manage stressors that challenge their ability to maintain control over given situations (Fishman, 2014).

Perceived personal control is described as the beliefs or perceptions that one has the ability, resources or opportunity to influence one's environment in order to achieve positive or favourable outcomes and to avoid negative effects through one's own actions (Fishman, 2014; Kassin, Fein, & Markus, 2014; Litt, 1988; Liu & Yussen, 2005; Thompson & Schlehofer, 2008). Self-regulatory beliefs launch and guide coping behaviour and such beliefs that regulate actions are control beliefs or the sense that *I can do it*, referring to an expectation that the individual can produce desired outcomes by having a sense of control over the challenge (Aldwin, 2011). Perceived control is considered an influential personal resource that an individual can utilise when faced with challenging or daunting circumstances (Skinner & Zimmer-Gembeck, 2011).

Theoretically, perceived personal control (PPC) has been conceptualised in different ways. Averill (1979) introduced a tripartite structure of PPC, which includes three dimensions, namely behavioural control, decisional control and cognitive control.

Thompson's (1981) typology distinguished between behavioural and cognitive control and emphasised that the perception of control is more significant than the actual control (Berkenstadt, Shiloh, Barkai, Katznelson, & Goldman, 1999, Thompson, 1981). The two-process model, as proposed by Rothbaum, Weisz and Snyder (1982), distinguished between primary control and secondary control, in which primary control involves taking action to achieve desired outcomes, whereas secondary control refers to changing oneself to adapt to the environment or to accepting one's circumstances as they are (Bryant, 1989; Thompson, 2011; Thompson & Schlehofer, 2008). Bryant's (1989) four-factor model of perceived control evaluates a person's perceived ability to: avoid negative events (primary negative control); cope with negative events (secondary negative control); obtain positive events (primary positive control); and savour positive events (secondary positive control). This four-factor model explains an individual's self-evaluation of perceived control and distinguishes between perceived primary control (over events) and secondary control (over feelings) separately in relation to positive and negative experiences (Bryant, 1989). Thompson and Schlehofer (2008) suggest that perceived control consists of two dimensions, locus of control, referring to beliefs of either internal or external motivation and reinforcement and self-efficacy, the belief of acquired personal ability to enact effective response. In this research of teachers' sense of personal control, the Averill (1979) model, elaborated on by Taylor (1983) and Thompson et al. (1993), will be used.

A sense of perceived personal control is an asset as it motivates individuals to take action and avoid stressful situations, it also encourages problem-solving and focuses attention on solutions (Thompson, 2011). Perceived personal control have been found to promote aspects of flourishing at work such as positive work-related attitudes, job satisfaction, career prospects, work performance and the level of work engagement (Bitner, Faranda, Hubbert, & Zeithami, 1997). On the contrary, perceived lack of control can result in the development of anxiety disorders (Hogendoorn et al, 2014) and according to Thompson and Schlehofer (2008), individuals presenting a low sense of personal control are more likely to choose a passive approach, tending to develop the need to want others to act on behalf of them.

Aims of this Study

In order to investigate the perceived stress and mental health, as well as the perceived personal control of teachers and the effect of these factors on their flourishing at work, the statistical analyses were done in three phases. The following aims were used: a) to identify and test a measurement and structural model with both cross-sectional and longitudinal data

and to determine the descriptive statistics, reliabilities and correlations of the factors (phase 1); b) to identify latent profiles on scores of participants on the perceived personal control (PPC) scale, to test measurement invariance between the identified profiles and to estimate the mean of a distal continuous outcome across latent profiles, by means of BCH (phase 2); c) to determine the indirect effects of perceived stress through mental health on flourishing at work.(phase 3).

Method

In the section below, the research design, participants and procedures and general methodology followed, will be described.

Research design

The research design was an ex post facto (after the effect) cross-sectional design, which means that a cross-sectional survey was done with the same group of teachers about their mental health, flourishing at work, perceived personal control and perceived stress in the teaching context. However, the participants completed the questionnaires at two occasions, four months apart, which also made this a one-group pre-and post-test research design of longitudinal nature (Thyer, 2012). The research methods were quantitative and supported the positivist research paradigm (see Devi, 2017).

Participants and procedures

Participants were sampled from the Sedibeng East District in the Gauteng province of South Africa. A convenience sample of teachers (n = 209) from eight schools, which included primary, secondary and special education schools, participated in the study.

After obtaining the Gauteng Department of Education's permission to conduct the research, as well as that of headmasters of schools and school governing bodies, the researcher and a research assistant visited the schools to meet the teachers and give them information about the nature of the research and their rights as participants in the research. Informed consent letters were made available and interested teachers signed these within four days and returned them to the research assistant at an agreed-on time and place (only consenting teachers were included in the study.) After that, booklets with the questionnaires were completed and returned to the researcher, who was also available for assistance during the process of questionnaire completion.

Data collection

A biographical questionnaire, developed by the researcher, was used to obtain information about the teachers' gender, years of teaching experience, educational background, the grades they taught and the type of school where they were presently teaching. Thereafter, the following validated questionnaires were completed:

The Perceived Stress Scale (PSS) of Cohen and Williamson (1988) was used to determine the educators' perceptions 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 are designed to tap into how unpredictable, uncontrollable and overloaded respondents find their lives (Cohen & Williamson, 1988). The scale includes questions about current levels of experienced stress and respondents are asked how often they feel a certain way. Participants respond by making use of a five-point Likert scale, ranging from zero (never) to four (very often). Higher scores indicate more perceived stress. Evidence for validity shows that higher PSS scores are associated with greater vulnerability to depressive symptoms that are elicited by stressful life events (Cohen & Williamson, 1988). The Cronbach alpha coefficient for the internal reliability of the PSS is .75 (Cohen, Kamarck, & Mermelstein, 1983). The PSS was used in a South African study by Hamad, Fernald, Karlan and Zinman (2008), with findings that adults in South Africa demonstrated rates of perceived stress at or above levels elsewhere in the developing world. Scores ranged from zero to 40 and the test had a Cronbach alpha of .72 (Hamad et al., 2008). The PSS is available in the public domain for research.

The Mental Health Continuum – Short Form For Adults (MHC-SF) (Keyes, 2005, 2006). The MHC-SF is based on the original 39-item LF and both were developed with the specific purpose of measuring emotional, psychological and social well-being in the upper or flourishing range of the mental health continuum (Keyes, 2005, 2006, 2009). The MHC-SF is a 14-item self-report measure of positive mental health, which places individuals' level of well-being along a continuum from flourishing to languishing. The three subscales, emotional well-being (three items), psychological well-being (five items) and social well-being (six items), constitute the multilateral model of well-being (Keyes, 2005, 2006, 2009). Emotional well-being (EWB) is measured in terms of an individual's subjective well-being, including satisfaction with life, positive and negative affect. The level of self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy experienced by an individual, is included in the psychological well-being (PWB) subscale.

Social well-being (SWB) measures issues related to social integration, social contribution, social coherence, social actualisation and social acceptance. The frequency of emotional, psychological and social well-being during the previous month is rated on a six-point Likert scale (0=never and 5=every day). The MHC-SF has produced good internal consistency coefficients of more than .80 and high discriminant validity (Keyes, 2005, 2006; Keyes et al., 2008). Keyes et al. (2008) found an internal reliability score of .74 for the total MHC-SF in a validation study done with Setswana-speaking South Africans, whilst a study conducted by Koen (2010) with professional nurses found an internal reliability score with Cronbach alpha coefficients of .83. Keyes et al. (2008) reported Cronbach alphas of .75 to .90 for the MHC-SF in four different South African samples. The MHC-SF is available in the public domain for research.

The Flourishing-at-Work Scale (FAWS-SF) of Rautenbach and Rothmann (2015), is a 21-item scale based on the original 39-item scale of the authors and measures expressions of emotional, psychological and social well-being at work. Respondents indicate the frequency with which they experienced specific aspects of the three dimensions of well-being during the past month, on a six-point scale ranging from one (never) to six (every day). Such a response scale allows for the categorisation of levels of well-being corresponding to the three dimensions used by Keyes (2002, 2005, 2007), namely emotional, psychological and social well-being, to assess positive mental health. Flourishing would be indicated by never/once or twice experiencing the well-being features and moderate work well-being would mean neither flourishing nor languishing. Rautenbach and Rothmann (2015) reported internal consistencies of .82 to .90, indicating acceptable reliability of the FAWS-SF. The reason for including the FAWS-SF in this study is because it investigates the psychosocial well-being of teachers specifically in their work context, whereas the other scales report on the variables measured more within an intrapersonal context. The FAWS-SF was also developed in and for a South African work context. The scale was obtained from the authors for the purposes of this research.

The Perceived Personal Control (PPC**)** Questionnaire of Berkenstadt et al. (1999) was developed for the measurement of an individual's sense of perceived personal control. Based on the work of Averill (1973), Taylor (1983) and Thompson et al. (1993), three separate control dimensions were distinguished and incorporated in the questionnaire, namely behavioural control (the availability of an influential response), cognitive control, (the processing of information to appraise a potentially threatening situation as less stressful) and

decisional control (the opportunity to choose among various courses of action) (Smets, Pieterse, Aalfs, Ausems, & Van Dulmen, 2006). The PPC asks respondents to indicate their subjective perception of how much control they believe to have over a problem, using nine items with a three-point response scale (0=do not agree, 1=somewhat agree, 2=completely agree). A total score is calculated by adding the item scores (ranging from 0-2) divided by the total number of items. Higher scores indicate a respondent's greater sense of perceived personal control. Measuring the effect of perceived personal control on the outcome of genetic counselling, Berkenstadt et al. (1999) found that the reliability of the scale was good before counselling, where the Cronbach alpha of the total scale was .83 and also after counselling where it was .86, thus validating the three-factor structure of the PPC concept. Smets et al. (2006) aim to assess further the psychometric properties of the PPC. Data were used from two samples and Cronbach alpha coefficients ranging from .79 to .81 were reported. McAllister, Wood, Dunn, Shiloh and Todd (2011) validated the PPC in an UK population and found internal consistency of .83, good convergent validity and sensitivity to change of the scale. This scale has not been used in South African research. The PPC is available in the public domain for research.

Ethical considerations

The Humanities and Health Research Ethics Committee (HHREC) of the North-West University (NWU-HS-2017-0026) granted ethical approval for the study. All criteria required for ethics research, as set out by the HHREC and other ethics policies and guidelines, were strictly adhered to in this study.

Data analysis

Statistical analysis was conducted with SPSS 25.0 (IBM Inc., 2018) and Mplus 8.3 (Muthén & Muthén, 1998-2019). Latent variable modelling was used to test the measurement and structural models. The maximum likelihood estimation with robust standard errors (MLR) was used as an estimator. The following indices were used to test the fit of the models with the data: the chi-square statistic (the test of absolute fit of the model), standardised root mean residual (SRMR), root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI) and comparative fit index (CFI) (West, Taylor, & Wu, 2012). TLI and CFI values higher than .90 are acceptable, but values higher than .95 indicate excellent fit. RMSEA and SRMR values lower than .08 indicate a close fit between the model and the data.

Descriptive statistics were computed to describe the data. Point estimates of scale reliability (rather than alpha coefficients) were computed through confirmatory factor analysis (CFA) (see Raykov, 2009). Cut-off values for scale reliability of .70 (Raykov, 2009) were used and Pearson correlations were employed to determine correlations among the variables. Statistical significance was established at 99% ($p \leq .01$) and practical significance was established at .30 with a medium effect and .50 with a large effect (Cohen, 1988).

Latent profile analysis was used to identify person-centred profiles in terms of perceived personal control. To estimate the LPA model, several steps were followed, first, the optimal number of latent profiles was determined; secondly, the latent profile classification was examined; thirdly, the latent profiles were labelled; and lastly, latent profile membership was predicted. A series of models with an increasing number of latent profiles were tested. A model was retained when there was a significant improvement from the reference model to this model with more profiles. The models were evaluated according to the lowest Bayesian information criterion (BIC), Akaike information criterion (AIC) and sample-size adjusted BIC (ABIC) values, comparing the different models. The model with the smallest value of information criterion (AIC, BIC and ABIC) is desired. BIC is well known to determine the number of profiles that will be used (Geiser, 2013). The Lo-Mendell-Rubin likelihood ratio test (LMR) (Lo, Mendell & Rubin, 2001), the adjusted LMR LR (ALMR) test and the significant bootstrap likelihood ratio test (BLRT) were used for assessing the fit between two models that differed by one profile and provided a *p*-value indicating the best-fitting model (Wang & Wang, 2012). Entropy was used to provide an index of model classification quality. Values greater than .80 indicated adequate classification quality and values closer to 1.0 indicated better classification quality (Jung & Wickrama, 2008).

Measurement invariance was tested to compare the two latent profiles on the different variables included in the measurement model. Measurement invariance was investigated in three hierarchical steps (Wang & Wang, 2012), namely a) testing for configural invariance; b) testing for metric invariance; and c) testing for scalar invariance. Configural invariance exists when the same number of factors and free or fixed factor loadings (without any other equality constraints on any other model parameters) exist across groups. Metric (weak) invariance exists when factor loadings are equal across groups. Scalar (strong) invariance exists when factor loadings, as well as item intercepts, are invariant.

To determine whether any relationships were indirectly affected by independent variables, the procedure explained by Hayes (2018) was used.

Results

The data of this study were analysed in three phases and will be reported below according to the phases. Since the data was obtained on two occasions, mention will be made of Time 1 (T1) and Time 2 (T2) data, analysis and results. Discussion of the findings will follow thereafter.

- Phase 1: Testing a measurement and structural model with both cross-sectional and longitudinal data, descriptive statistics, correlations and reliabilities of factors.
- Phase 2: Latent profile analysis (LPA) on scores of the perceived personal control (PPC) scale, measurement invariance testing (configural, metric and scalar) and using the BCH procedure to assess the differences between latent PPC profiles on the stress, mental health and flourishing at work of teachers.
- Phase 3: Testing for indirect effects of stress through mental health on the flourishing at work.

Results of phase 1

Testing the measurement model

By means of confirmatory factor analysis (CFA) an eight-factor measurement model was identified. Survey items served as indicators of latent variables and the model was made up of the following latent variables: (1) negative stress, a first order latent variable with six items; (2) Positive stress, a first order latent variable with four items; (3) Mental health, a second order latent variable with three first order latent variables: emotional well-being with three items; psychological well-being with six items and social well-being with five items; (4) Emotional well-being at work, a first order latent variable with four items; (5) Psychological well-being at work, a first order latent variable with nine items; and (6) Social well-being at work, a first order latent variable with five items. Latent models 1 – 3 contained T1 scores and latent models 4 – 5 contained T2 scores. Correlations were allowed among the latent variables of the measurement model.

The model yielded the following fit statistics: $\chi^2 = 1381.55$, $df = 801$, $p < .0001$, CFI = .95, TLI = .94, RMSEA = .06 (90% CI .054, .064), SRMR = .07. These statistics indicate a good statistical fit for the measurement model. Table 1 shows the descriptive statistics, reliabilities and correlations of the latent variables.

Table 1

Descriptive Statistics, Reliabilities and Correlations

	Mean	*SD*	ρ	NSTRES (T1)	PSTRES (T1)	MHC (T1)	EWB-aw (T2)	PWB-aw (T2)
NSTRES (T1)	2.46	0.81	.89	-	-	-	-	-
PSTRES (T1)	2.39	0.61	.74	-.69*++	-	-	-	-
MHC (T1)	3.76	0.91	.88	-.61*++	.71*++	-	-	-
EWB-aw (T2)	4.18	1.01	.88	-.26*	.36*+	.86*+	-	-
PWB-aw (T2)	4.31	1.01	.93	-.30*+	.42*+	.90*+	.88*++	-
SWB-aw (T2)	3.94	1.19	.92	-.37*+	.35*+	.82*+	.81*++	.89*++

Note: NSTRES = Perceived negative stress; PSTRES = Perceived positive stress; MHC = Mental health; EWB-aw = Emotional well-being at work; PWB-aw = Psychological well-being at work; SWM-aw = Social well-being at work

* $p < .01$

+ $r > .30$ practically significant (medium effect)

++ $r > .50$ practically significant (large effect)

Reliabilities calculated by means of the Raykov (2009) method range from .74 for negative stress to .93 for psychological well-being at work. These indices show acceptable reliability for the scales used. The correlations were in line with what was theoretically expected. Perceived negative stress correlated significantly negatively with perceived positive stress and with mental health, as well as with the three well-being or flourishing at work factors. Perceived positive stress correlated significantly positively with mental health and with the three well-being at work factors. Mental health correlated significantly positively with emotional, psychological and social well-being at work. The correlations were of medium and large practical effect.

The measurement model served as the basis for identifying a structural model, which yielded the following fit statistics: χ^2 = 1381.06, *df* = 861, $p < .001$, CFI = .95, TLI = .94, RMSEA = .059 (90% CI .054, .064), SRMR = .07. The structural model was used in the other phases of this study to do the intended analysis.

Table 2 shows the standardised regression weights for stress in Time 1 on mental health in Time 1, as well as stress and mental health in Time 1 on flourishing at work in Time 2.

Table 2

Standardised Path Coefficients

Dependent variable	Independent variable	β	SE	Est/SE	*p*
Mental health	Negative stress	-.23	.09	-2.59	.01**
	Positive stress	.55	.08	6.53	.00**
EWB at work	Negative stress	.11	.11	0.99	.32
	Positive stress	.04	.14	0.29	.77
	Mental health	.56	.10	5.39	.00**
PWB at work	Negative stress	.08	.10	0.84	.40
	Positive stress	.13	.13	0.99	.32
	Mental health	.49	.11	4.50	.00**
SWB at work	Negative stress	-.13	.10	-1.31	.19
	Positive stress	-.13	.12	-1.08	28
	Mental health	.55	.10	5.64	.00**

** $p < .01$

Table 2 shows that mental health in Time 1 is predicted by low negative stress (β = -0.23, p < .01) and high positive stress (β = 0.55, p < .0001). Stress in Time 1 predicted 53% of the variance in mental health in Time 1. Mental health in Time 1 predicted emotional well-being at work (β = 0.56, p < .0001), psychological well-being at work (β = 0.49, p < .0001) and social well-being at work (β = 0.55, p < .01) in Time 2. Stress and mental health in Time 1 predicted 28%, 29% and 30% of the variance in emotional, psychological and social well-being or flourishing at work, respectively in Time 2.

Results of phase 2

Latent profile analysis (LPA) was done with Mplus 8.3 (Muthén & Muthén, 1998-2019) to group participants on their responses to the nine items of the PPC scale that were given on a three-point response scale. These responses were given in the first measurement (T1). A series of models with an increasing number of latent profiles were tested. Models were evaluated according to the lowest AIC and BIC values comparing the different models, entropy, the Lo-Mendell-Rubin (LMR LR) test, the adjusted LMR LR (ALMR LR) test and the bootstrapped likelihood ratio test (BLRT).

Significant enhancement from the reference model to the model with more profiles led to a model being retained. Models were compared using the lowest BIC value and entropy values ranging from 0 to 1, where higher values were better (values smaller than .60 were not accepted). The Lo-Mendell-Rubin (LMR LR) test (Lo, Mendell & Rubin, 2001), the adjusted LMR LR test and the bootstrapped likelihood ratio test (BLRT) (Wang & Wang, 2012) were used in Mplus to test the number of profiles in a mixture analysis. Posterior class membership probabilities, as well as entropy values, were used to specify the quality of profile membership.

To determine the LPA model, four steps were followed, namely the ideal number of latent variables were determined; the latent profile classification was investigated; the latent profiles were labelled; and the prediction of latent profile membership was completed. To determine the number of latent profiles, four models with different numbers of latent profiles were estimated and compared, starting with a single-profile model and increasing the number of profiles one at a time. The fit indices are reported in Table 3. The Akaike information criterion (AIC) (1 849.62), the Bayesian information criterion (BIC) (1 871.26) and the sample size-adjusted BIC (ABIC) (1 852.23) values of the model with one latent profile were the largest, indicating that this model had the worst fit.

Table 3

Comparison of Different Latent Profiles

Model	AIC	BIC	ABIC	LMR LR Test p-value	ALMR LR Test p-value	BLRT p-value
Model 1 With one profile	3507.7	3567.9	3510.9	n/a	n/a	n/a
Model 2 With two profiles	3031.4	3124.9	3036.2	0.0196	.0208	.0000
Model 3 With three profiles	2388.6	2515.6	2395.2	0.7888	.7902	.0000

Table 3 shows that a two-profile model fit the data the best. Although the BIC value of the two-profile model was higher than that of the three-profile model, the LMR-LR and ALMR-LR p-values were lower, which indicated that the two-profile model is the accepted LPA model for the data used.

The quality of the latent profile membership was investigated. The entropy values for the two-profile and three-profile models were .88 and 1.00 respectively, indicating a good classification (Clark, 2010). The average latent profile probabilities for the two-profile LPA model were .96 (profile 1) and .97 (profile 2), which could be considered high compared to the recommended cut-off value of .70 of Nagin (1999). The profiles were labelled according to their means for the nine items. Two latent profiles were found as shown in Figure 1.

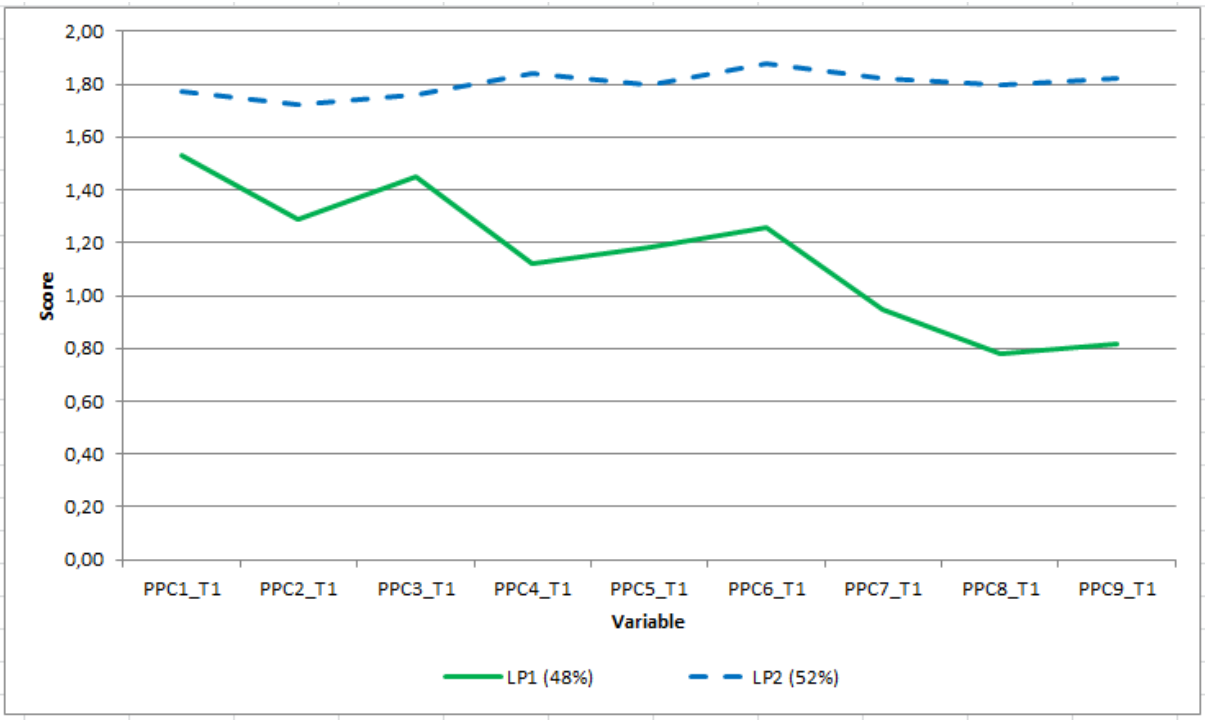


Figure 1. Latent perceived personal control profiles

Figure 1 shows that the two profiles identified through person-centred analysis of participants' responses on perceived personal control were "doubtful personal control" (48% of the participants) and "confident personal control" (52% of the participants). The characteristics of the two perceived personal control profiles are described below.

Profile 1: Doubtful personal control: Regarding cognitive control, individuals in this profile, to some extent, believe they know what problem caused them to experience stress (Q1), they somewhat believe they know what the problem implies for themselves and their families (Q2), to a certain extent they know what gave rise to the problem (Q3). Regarding decisional control, individuals in this profile feel less equipped to make future-directed decisions (Q4), feel less self-assured in evaluating available options in order to make decisions (Q5) and to change the future of their families (Q6). Concerning behavioural control, individuals in this profile believe they might not be able to do things to prevent problems or stress situations from occurring (Q7), are uncertain in knowing what to do to ease the situation (Q8) or to keep on going (Q9).

Profile 2: Confident personal control: With regard to cognitive control, individuals in this profile believe they understand what problem caused them to experience stress (Q1), they believe that they know what the problem implies for themselves and their families (Q2) and they believe they know what gave rise to the problem (Q3). Concerning decisional control,

individuals in this profile feel equipped to make future decisions (Q4), feel more confident in evaluating available options in order to make decisions (Q5) to change the future of their families (Q6). Regarding behavioural control, individuals in this profile believe they can do things to prevent problems or stress situations from reoccurring (Q7), know what to do to ease the situation (Q8) and how to follow through or to keep on going (Q9).

Measurement invariance testing

Next, the configural, metric and scalar invariance of the two personal control profiles were computed for the variables in the structural model. This was done as a prior step to testing the differences between means and correlations of teachers who showed lower versus higher personal control. Table 4 displays the results of the measurement invariance testing of low and high personal control samples.

Table 4

Measurement Invariance of Profiles

Model	χ^2	*df*	*p*
Metric against configural	41.99	34	.163
Scalar against configural	80.38	68	.145
Scalar against metric	38.08	34	.289

Table 4 reveals that configural, metric and scalar invariance exist (in terms of the variables included in the structural model) between the two personal control profiles. Therefore, means and regression coefficients of the two profiles can be compared for the variables that were included in the structural model.

Latent profiles and stress, mental health and flourishing at work

Comparison of mean scores of the personal control profiles

The automatic BCH approach for estimating the mean of a distal continuous outcome across latent profiles (Asparouhov & Muthén, 2014; Bakk & Vermunt, 2016) was used in this study. The latent profile model was estimated using the nine indicator variables of the PCC scale. The means of the auxiliary variables were estimated across the different profiles with the BCH method to avoid shifts in determining the latent profile analysis. The BCH method makes use of weighted multiple-group analysis to identify where the groups correspond to the

latent profiles and a shift in the profiles is not possible because the profiles are known (Asparouhov & Muthén, 2014). Results using the BCH method can be seen in Table 5.

Table 5

Equality Tests of Means Across Profiles Using Posterior Probability-Based Multiple Imputations with Three Degrees of Freedom for the Overall Test and One Degree of Freedom for the Pairwise Tests

				Overall test: Profile 1 vs. Profile 2	
	Profile	Mean	SE	Chi-square	*p*
NSTRES	Profile 1 Profile 2	.23 -.21	.07 .07	19.14	.000*
PSTRES	Profile 1 Profile 2	-.27 .25	.05 .06	43.42	.000*
MHC	Profile 1 Profile 2	-.30 .26	.06 .06	36.97	.000*
EWB-aw	Profile 1 Profile 2	-.18 .16	.07 .07	10.43	.001*
PWB-aw	Profile 1 Profile 2	-.22 .19	.06 .07	17.44	.000*
SWB-aw	Profile 1 Profile 2	-.24 .22	.08 .08	16.03	.000*

Note: NSTRES = perceived negative stress; PSTRES = perceived positive stress; MHC = mental health (complete score); EWB-aw = emotional well-being at work; PWB-aw = psychological well-being at work; SWB-aw = social well-being at work.

Table 5 shows that the two perceived personal control profiles showed significant differences in their mean scores on all the variables included in the structural model. Participants in Profile 1 (doubtful personal control) had statistically significant higher mean scores on perceived negative stress ($\chi^2 = 19.14$; $p < .001$) and lower mean scores on perceived positive stress ($\chi^2 = 43.42$; $p < .001$), mental health ($\chi^2 = 36.97$; $p < .001$), as well as emotional ($\chi^2 = 10.43$; $p < .001$), psychological ($\chi^2 = 17.44$; $p < .001$) and social well-being or flourishing at work ($\chi^2 = 16.03$; $p < .001$) compared to Profile 2 (confident personal control).

Differences between the regression coefficients for the two personal control profiles

Wald tests were conducted in Mplus 8.3 to test the significance of differences between the regression coefficients of the two personal control groups. Table 6 shows the p-values of the comparisons of the regression coefficients for the personal control profiles.

Table 6

Differences between the Regression Coefficients

Variables in the Wald test	Value	*df*	*p*
Emotional well-being at work on negative stress	0.31	1	.57
Emotional well-being at work on positive stress	1.00	1	.32
Emotional well-being at work on mental health	0.02	1	.89
Mental health on negative stress	3.22	1	.07
Mental health on positive stress	2.71	1	.10
Psychological well-being at work on negative stress	0.73	1	.39
Psychological well-being at work on positive stress	0.67	1	.42
Psychological well-being at work on mental health	.00	1	.98
Social well-being at work on negative stress	.11	1	.75
Social well-being at work on positive stress	.87	1	.35
Social well-being at work on mental health	.02	1	.89

Table 6 shows that none of the Wald tests were statistically significant. No statistically significant differences were therefore observed between the regression coefficients of the two personal control profiles on the dependent variables in Time 1 and Time 2.

Results of phase 3

The procedure suggested by Hayes (2018) was followed to investigate the indirect effects of stress on flourishing at work (via mental health). Bootstrapping was used to generate an empirically derived representation of the sampling distribution of the indirect effect and this representation is used for the construction of confidence intervals. Two-sided bias-corrected 95% confidence intervals (CIs) were to evaluate indirect effects using 10 000 bootstrap samples (see Table 7). The confidence intervals indicate the values between which lower and upper values of the indirect effect varied in 95% of the 10 000 computed bootstrap estimates. If the confidence interval is above zero, the indirect effect is positive. If the confidence interval is below zero, the indirect effect is negative. There is clear evidence that the indirect

effect is positive (or negative) to a "statistically significant" degree if the confidence interval does not include zero (Hayes, 2018, p. 101).

In Table 7 the indirect effects of perceived stress through mental health on emotional, psychological and social well-being or flourishing at work are depicted.

Table 7

Confidence Intervals of Standardised Indirect Effects

Item	B	SE	95% C.I.	***p***
Negative stress to EWB at work	-.13	.08	[-.28, .02]	.093
Positive stress to EWB at work	.31	.10	[.17, .54]	.001**
Negative stress to PWB at work	-.11	.67	[-.26, -.01]	.090**
Positive stress to PWB at work	.27	.10	[.10, .48]	.004**
Negative stress to SWB at work	-.13	.07	[-.29, .01]	.084
Positive stress to SWB at work	.31	.10	[.17, .53]	.001**

Table 7 shows that perceived negative stress had a significant negative indirect effect, through lower mental health, on psychological well-being at work (PWB-aw). Perceived positive stress (PSTRES) had significant indirect effects through mental health on emotional, psychological and social well-being or flourishing at work.

Finally, Wald tests were conducted to determine whether there were statistically significant differences between the two perceived personal control profiles in the indirect effects of positive and negative stress on well-being at work via mental health. None of the Wald tests were statistically significant.

Discussion

This study investigated school teachers' stress and mental health as well as the effects thereof on their flourishing at work. Moreover, the study determined whether the effects of perceived personal control of teachers affected their stress, mental health and flourishing at work. Lastly, the study focused on the indirect effects of stress through mental health on teachers' flourishing at work.

An eight-factor measurement model was specified that had a good statistical fit and served as the basis for a structural model. Correlations between variables were all significant and agreed with what was theoretically expected. Practically significant correlations of large

effect were found between perceived stress and mental health. The results showed that teachers who appraised the stressors in the educational context as taxing and unmanageable were inclined to experience languishing symptoms that Keyes (2009) described as "a state of being mentally unwell" (p. 90). The teachers who appraised (Aldwin, 2007; Lazarus & Folkman, 1984) the educational stressors as challenging and manageable reflected mental strengths and resilience or flourishing (Keyes, 2009), also described by Keyes as positive mental health. Perceived stress was associated with mental health in Time 1, but also with emotional, psychological and social well-being in Time 2.

The structural model showed that both positive and negative stress impacted mental health (in Time 1) positively and negatively respectively. However, the size of the standardised regression coefficient of positive stress was more than twice as strong as for negative stress. This finding confirms the importance of positive stress for mental health. Concerning longitudinal effects, the results showed that mental health in Time 1 predicted the three dimensions of flourishing at work in Time 2. Stress and mental health in Time 1 had large effects on flourishing at work in Time 2 varying from 28% to 30%. Therefore, positive stress (and to a lesser extent negative stress) impacted the mental health of school teachers on the short term, but only mental health remained a statistically significant predictor of the three dimensions of flourishing at work on a longer term.

Perceived personal control might affect the levels of stress, mental health and flourishing at work, as well as the relationships between these variables. Perceived personal control is based on a belief that one has the ability to (a) cause or influence the outcomes of life events, (b) choose among outcomes, (c) cope with the consequence of outcomes and (d) understand these outcomes (Peterson, 1999; Skinner & Zimmer-Gembeck, 2011). Two latent profiles of personal control were identified using LPA. The profiles were labelled as doubtful personal control (48% of the participants) and confident personal control (52% of the participants). These two profiles correspond with profiles reported by Skinner and Zimmer-Gembeck (2011), namely optimal profiles and maladaptive profiles. Optimal profiles have strong control expectancies, beliefs in effort as successful strategy and high confidence in one's own capacities, together with low dependence on uncontrollable strategies. In contrast, maladaptive profiles showed a low generalised sense of control, low beliefs in effort as effective strategy and low confidence in own capacities combined with strong reliance on uncontrollable strategies. The similarities of these profiles with the profiles found in this study, are interesting and give theoretical credence to these results.

Skinner and Zimmer-Gembeck (2011) found that aggregate scores for the profiles in their study predicted engagement and achievement in the workplace. They also found significant associations between a sense of personal control and constructs such as locus of control, resilience, active coping, self-efficacy, mastery and perceived competence. Finally, Peterson (1999) came to the conclusion that a sense of personal control is both a cause and a consequence of the way people respond to their environment, a psychological process that guides people to be more than passive recipients of outcomes and to actively engage with their challenging environments, reminding one of the slight majority (52%) of the teachers in this study, who responded to the demanding educational context that they have to face with confident perceived personal control.

It is possible that the levels of stress, mental health and flourishing at work as well as the relationships between these variables might differ between individuals because of personal control perceptions. Therefore, it was vital to test the measurement invariance of the constructs included in the structural model of flourishing at work. The analyses provided support for the configural, metric and scalar invariance of the variables included in the structural model, indicating that the factor structures, the factor loadings and the item intercepts were invariant across the two profiles (Milfont & Fischer, 2015). Testing of the differences in means of the variables included in the structural model showed that teachers who doubt their personal control experienced statistically significantly more negative stress and less positive stress, mental health as well as emotional, psychological and social well-being at work compared with confident personal control teachers. These findings are in line with findings from previous studies (Peterson. 1999; Skinner & Zimmer-Gembeck, 2011; Thompson, 2009).

The dynamic given by authors such as Peterson (1999), Skinner et al. (2011) and Thompson (2009) to explain individual differences in perceived personal control, especially in stressful circumstances, lies mainly in the cognitive areas of human functioning and in socio-cultural belief systems. Stress attribution styles and causal explanatory styles (Lazarus & Folkman, 1984; Peterson & Seligman, 1984) that perceive stressful events as uncontrollable, give rise to thought patterns of helplessness and possibly hopelessness, both classic constructs described by Seligman (1992) and Abramson, Metalsky and Alloy (1989) respectively. Thompson (2009) describes the cognitive chain of a lack of perceived personal control as characterised by depressive thinking with catastrophising, anxiousness and feelings of helplessness. Conversely, Peterson (1999) describes a state of having perceived personal

control using rubrics such as learned hopefulness, learned industriousness, learned mastery, learned optimism, learned relevance and learned resourcefulness (p. 298). Peterson comes to the conclusion, which is also supported by Skinner et al. (2011) and by Thompson (2009), that a belief in one's own ability to influence outcomes is a consistent correlation of well-being on all levels and that several pathways run between perceived personal control and well-being.

As far as socio-cultural belief systems and a sense of personal control are concerned, Thompson (2009) cites extensive research reporting that the need for a sense of personal control and the beneficial role of perceived personal control in well-being takes on a different picture in Asian and African-American populations. In these populations, lower levels of perceived personal control were found and a weak relationship between perceived personal control and psychological outcomes was reported. In this study, the demographic variables of culture or ethnic descent were not included, although all South African races were represented in the sample. The results suggest that perceived personal control matters in terms of levels of positive and negative stress, mental health and emotional, psychological well-being at work, for all participants.

A comparison of the structural relationships for the doubtful and the confident perceived personal control profiles showed that there were no differences in the relationships between stress (positive and negative), mental health and the emotional, psychological and social well-being or flourishing at work dimensions.

A significant indirect effect was found for negative stress, through mental health on psychological well-being at work. Negative stress at work (measured at the same time as mental health) reduces the mental health of school teachers. As a result, these teachers experienced lower psychological well-being at work in the long term (including autonomy, competence and relatedness satisfaction, learning, meaningful work and work engagement). Positive stress, through mental health, had significant indirect and positive effects on emotional, psychological and social well-being at work over time. Therefore, it seems that teachers who experience positive stress are more mentally healthy, which results in them experiencing higher emotional well-being (job satisfaction and positive affect), psychological well-being (autonomy, competence and relatedness satisfaction, learning, meaningful work and work engagement) and social well-being at work over time.

These results could be read in conjunction with the preceding discussion in which it was indicated how mental health and psychological well-being are compromised under conditions

of stress and especially if the stress is appraised as taxing and unmanageable (Aldwin, 2007; Lazarus & Folkman, 1984). Negatively perceived work stress has been associated with *burnout or lowered mental health* that leads to lower work well-being with features such as psychological ill-being (or languishing, Keyes, 2002) and symptoms such as exhaustion, feeling overwhelmed and drained and becoming depersonalised with behaviour of withdrawing and distancing (Maslach, Schaufeli, & Leiter, 2001; Jackson, Rothmann, & Van de Vijver, 2006). Maslach et al. (2001) found that teachers are at risk of burnout in the teaching profession and found symptoms of both low mental health and low work well-being such as feeling depleted, frustrated, hardened, apathetic and drained of energy and motivation.

The contrary finding that work stress perceived as positive (manageable and stimulating) by the participating teachers in this study, leads to higher levels of mental health and via that, to work well-being on emotional, psychological and social levels, reminds one of the original convictions of classic authors like Ryff and Singer (2003) and Lazarus (1974). Ryff and Singer state that stress is an ubiquitous facet of human life and that stress is often the source of people's strengths, while Lazarus viewed stress as a life energy for physical and mental functioning and crucial in the development of life skills with which to survive and flourish (also see Crum & Lyddy, 2014; Mearns & Cain, 2003).

The results of the study discussed above suggest further research and although the aims of this study were met, there were some limitations that will be discussed below.

Limitations of and Recommendations from the Research

The questionnaires used in this study to assess important psychological concepts such as perceived stress, mental health, perceived personal control and emotional, psychological and social well-being or flourishing at work, were all in English, which is not the first language of most of the participants. Since such questionnaires tap into sensitive features of teachers' work life experiences, it is recommended that in future research of this nature, the questionnaires should be in the language of the respondents. For further research in South Africa, it is recommended that these questionnaires should be translated into all 11 languages of the country.

In this research, demographic variables such as ethnic background and culture were not taken into account. However, in the discussion on perceived personal control it was shown that findings on this construct were much different in Asian and Afro-American cultures, which were also mostly collective cultures, as are these cultural groups in South Africa.

Further research on the perceived personal control construct is recommended to investigate how it is conceptualised and responded to in the broad South African socio-cultural context.

Although some longitudinal research was done in this study by re-assessing all the variables used after a four-month interval with the same group of teachers, the constructs researched in this study are rich and represent such important psychological aspects and domains of human behaviour, that they lend themselves for further longitudinal and mixed method research designs. Such future research is recommended.

Many of the findings in this research were first-time findings, which call for replication studies to further support, refine or reject the current findings. Other findings were rich in meaning and could be further explored qualitatively. For example, qualitative research into an understanding of teachers' stress appraisal styles and their perceived personal control in the educational context could be recommended, especially with teachers who are either doubtful or confident in their personal control.

Practical interventions based on the findings of various studies with variables like those used in this study could be developed, implemented and validated in order to assist teachers in managing and constructively coping with the stress they face. Since the stress factor will remain a variable in the teaching and teacher well-being equation, enabling mechanisms and support systems for present and future teachers are recommended. More so, because existing research indicated that perceived personal control, coping, resilience and self-efficacy behaviour seems to be based on and influenced by continuous learning experiences (Skinner et al., 2011).

Conclusion

It can be concluded from this study that positive stress (and to a lesser extent negative stress) impact the mental health of teachers on the short term. However, only mental health predicts the three dimensions of flourishing at work on a longer term. Mental health mediates the relation between stress and well-being at work. Furthermore, perceived personal control affect the teachers' levels of stress, mental health and flourishing at work, as well as the relationships between these variables.

References

Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*(2), 358–372.

Acton, R., & Glasgow, P. (2015). Teacher wellbeing in neoliberal contexts: A review of the literature. *Australian Journal of Teacher Education*, *40*(8), 99–104.

Aldrup, K., Klusmann, U., & Lüdtke, O. (2017). Does basic need satisfaction mediate the link between stress exposure and well-being? A diary study among beginning teachers. *Learning and Instruction*, *50*, 21–30.

Aldwin, C. (2011). Stress and coping across the lifespan. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 15–34). Oxford, United Kingdom: Oxford University Press.

Aldwin, C. M. (2007). *Stress, coping, and development: An integrative perspective*. New York, NY: Guilford Press.

Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: Using the BCH method in Mplus to estimate a distal outcome model and an arbitrary secondary model. *Mplus Web Notes*, *21*(2), 1–22.

Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin*, *80*(4), 286–303.

Averill, J. R. (1979). The functions of grief. In *Emotions in personality and psychopathology* (pp. 337–368). Springer, Boston, MA.

Bakk, Z., & Vermunt, K. K. (2016) Robustness of stepwise latent class modeling with continuous distal outcomes. *Structural Equation Modeling: A Multidisciplinary Journal, 23*(1), 20–31.

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, *99*(2), 274–284.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: Freeman.

Berkenstadt, M., Shiloh, S., Barkai, G., Katznelson, M. B. M., & Goldman, B. (1999). Perceived Personal Control (PPC): A new concept in measuring outcome of genetic counseling. a new concept in measuring outcome of genetic counseling. *American Journal of Medical Genetics*, *82*, 53–59.

Boshoff, S. M., Potgieter, J. C., Ellis, S. M., Mentz, K., & Malan, L. (2018). Validation of the Teacher Stress Inventory (TSI) in a multicultural context: The SABPA study. *South African Journal of Education*, *38*(1). Art. #1491, 13 pages, https://doi.org/10.15700/saje.v38ns2a1491

Bryant, F. B. (1989). A four- factor model of perceived control: Avoiding, coping, obtaining, and savoring. *Journal of Personality, 57*(4), 773–797.

Clark, S. L. (2010). *Mixture modeling with behavioral data.* (Unpublished doctoral dissertation.) University of California, Los Angeles, CA.

Clipa, O. (2017). Teacher stress and coping strategies. In Clipa (Ed.), O *Studies and Current trends in Science of Education* (pp. 120–128). Editura Lumen, Asociatia Lumen.

Clipa, O., & Boghean, A. (2015). Stress factors and solutions for the phenomenon of burnout of preschool teachers. *Procedia-Social and Behavioral Sciences*, *180*, 907–915.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Orlando, FL: Academic Press.

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapam & S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology* (pp. 31–67). Newbury Park, CA: Sage.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396.

Cozolino, L. (2006). *The neuroscience of human relationships*. New York, NY: W. W. Norton & Company.

Crum, A., & Lyddy, C. (2014). De-stressing stress: The power of mindsets and the art of stressing mindfully. In A. C. T. Ngnoumen, & E. J. Langer (Eds.), *The Wiley Blackwell handbook of mindfulness* (pp. 948–963). Hoboken, NJ: Wiley.

Devi, P.S. (2017). *Research methodology: A handbook for beginners*. New York, NY: Norton Press.

Fishman, E. J. (2014). With great control comes great responsibility: The relationship between perceived academic control, student responsibility, and self- regulation. *British Journal of Educational Psychology*, *84*(4), 685–702.

Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., & Sartorius, N. (2017). A proposed new definition of mental health. *Psychiatria Hungarica*, *51*(3), 407–411.

Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., & Sartorius, N. (2015). Toward a new definition of mental health. *World Psychiatry*, *14*(2), 231–233.

Geiser, C. (2013). *Methodology in the social sciences. Data analysis with Mplus.* New York, NY: Guilford Press.

Gorsy, C., Panwar, N., & Kumar, S. (2015). Mental Health among Government School Teachers. *The International Journal of Indian Psychology*, *3*(1), 10.

Gray, C., Wilcox, G., & Nordstokke, D. (2017). Teacher mental health, school climate, inclusive education and student learning: A review. *Canadian Psychology/Psychologie Canadienne*, *58*(3), 203–210.

Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education*, *24*(5), 1349–1363.

Grenville-Cleave, B., & Boniwell, I. (2012). Surviving or thriving: Do teachers have lower perceived control and well-being than other professions? *Management in Education*, *26*(1), 3–5.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health*, *62*(6), 538–544.

Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, *85*(1), 4–40.

Hogendoorn, S. M., Prins, P. J., Boer, F., Vervoort, L., Wolters, L. H., Moorlag, H., & De Haan, E. (2014). Mediators of cognitive behavioral therapy for anxiety-disordered children and adolescents: Cognition, perceived control, and coping. *Journal of Clinical Child and Adolescent Psychology*, *43*(3), 486–500.

IBM Corp. (2018). *IBM SPSS statistics: Version 25*. Armonk, NY: IBM Corp.

Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. (2006). A model of work- related well- being for educators in South Africa. *Stress and Health: Journal of the International Society for the Investigation of Stress*, *22*(4), 263–274.

Jo Bitner, M., Faranda, W. T., Hubbert, A. R., & Zeithaml, V. A. (1997). Customer contributions and roles in service delivery. *International Journal of Service Industry Management*, *8*(3), 193–205.

Jung, T., & Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass, 2*(1), 302–317.

Kassin, S., Fein, S., & Markus, H. (2014). *Social psychology* (9th ed.). Belmont, CA: Wadsworth Cengage Learning.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*(2), 207–222.

Keyes, C. L. M. (2004). The nexus of cardiovascular disease and depression revisited: The complete mental health perspective and the moderating role of age and gender. *Aging and Mental Health, 8*(3), 266–274.

Keyes, C. L. M. (2005). Chronic physical conditions and aging: Is mental health a potential protective factor? *Aging International, 30*(1), 88–104.

Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing. A complementary strategy for improving national mental health. *American Psychologist, 62*(2) 95–108.

Keyes, C. L. M. (2009). The nature and importance of positive mental health in American adolescents. In R. Gilman, E. S. Huebner, & M. J. Furlong (eds.), *Handbook of positive psychology in school* (pp. 9–23). New York, NY: Routledge.

Keyes, C. L. M. (2013). Protecting and promoting positive mental health: Early and often throughout the lifespan. In C. L. M. Keyes (Ed.), *Mental well-being: International contributions to the study of positive mental health* (pp. 3–28). Dordrecht, The Netherlands: Springer.

Keyes, C. L. M., Wissing, M. P., Potgieter, J. P., Temane, Q. M., Kruger, A., & Van Rooy, S. (2008). Evaluation of the mental health continuum short form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology and Psychotherapy, 15*(3) 181–192.

Koen, D. (2010). *Resilience in professional nurses*. (Doctoral Thesis). North-West University, Vanderbijlpark, South Africa.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27–35. University of York: UK.

Lazarus, R. S. (1974). Psychological stress and coping in adaptation and illness. *The International Journal of Psychiatry in Medicine, 5*(4), 321–333.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Litt, M. D. (1988). Self-efficacy and perceived control: cognitive mediators of pain tolerance. *Journal of Personality and Social Psychology, 54*(1), 149–160.

Liu, Y., & Yussen, S. (2005). A comparison of perceived control beliefs between Chinese and American students. *International Journal of Behavioral Development, 29*(1), 14–23.

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*(3), 767–778.

Louw, D., George, E., & Esterhuyse, K. (2011). Burnout amongst urban secondary school teachers in Namibia. *SA Journal of Industrial Psychology, 37*(1), 01–07.

Ly, V., Wang, K. S., Bhanji, J., & Delgado, M. R. (2019). A reward-based framework of perceived control. *Frontiers in Neuroscience, 13,* 65. doi: 10.3389/fnins.2019.00065.

Mearns, J., & Cain, J. E. (2003). Relationships between teachers' occupational stress and their burnout and distress: Roles of coping and negative mood regulation expectancies. *Anxiety, Stress & Coping: An International Journal, 16*(1), 71–82.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual review of psychology, 52*(1), 397–422.

McAllister, M., Wood, A. M., Dunn, G., Shiloh, S., & Todd, C. (2012). The perceived personal control (PPC) questionnaire: Reliability and validity in a sample from the United Kingdom. *American Journal of Medical Genetics Part A, 158*(2), 367–372.

McCallum, F., & Price, D. (2010). Well teachers, well students. *The Journal of Student Wellbeing, 4*(1), 19–34.

McLean, L., & Connor, C. M. (2015). Depressive symptoms in third- grade teachers: Relations to classroom quality and student achievement. *Child Development, 86*(3), 945–954.

McLean, L., Abry, T., Taylor, M., Jimenez, M., & Granger, K. (2017). Teachers' mental health and perceptions of school climate across the transition from training to teaching. *Teaching and Teacher Education, 65,* 230–240.

Milfont, T. L., & Fischer, R. (2015). Testing measurement invariance across groups: Applications in cross-cultural research. *International Journal of Psychological Research, 3,* 111–130.

Muthén, L. K., & Muthén, B. O. (1998-2018). *Mplus users' guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Muthén, L. K., & Muthén, B. O. (1998-2019). *Mplus users' guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Nagin, D. S. (1999). Analyzing developmental trajectories: A semiparametric, group-based approach. *Psychological Methods*, *4*(2), 139–157.

Parray, W., Kumar, S., Awasthi, P. (2016), Stress among teachers: A theoretical examination, *International Journal of Indian Psychology, 3*(4), 57.

Peterson, C. (1999). Personal control and well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 288-301). New York, NY: Russel Sage Foundation.

Peterson, C., & Seligman, M. E. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological review*, *91*(3), 347–374.

Rautenbach, C. (2015). *Flourishing of employees in a fast-moving consumable goods environment.* (Unpublished Doctoral dissertation). North-West University: Vanderbijlpark, South Africa.

Rautenbach, C., & Rothmann, S. (2017). Psychometric validation of the Flourishing-at-Work Scale–Short Form (FWS-SF): Results and implications of a South African study. *Journal of Psychology in Africa*, *27*(4), 303–309.

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development*, *42*(3), 223–232.

Raykov, T. (2009). Interval estimation of revision effect on scale reliability via covariance structure analysis. *Structural Equation Modeling, 16*, 539–555.

Redelinghuys, J. J. K. (2016). *Flourishing of teachers in secondary schools* (Doctoral dissertation, North-West University (South Africa), Vaal Triangle Campus).

Redelinghuys, K., Rothmann, S., & Botha, E. (2019). Flourishing-at-work: The role of positive organizational practices. *Psychological reports*, *122*(2), 609–631.

Renshaw, T. L., Long, A. C., & Cook, C. R. (2015). Assessing adolescents' positive psychological functioning at school: Development and validation of the Student Subjective Wellbeing Questionnaire. *School Psychology Quarterly*, *30*(4), 534–552.

Roffey, S. (2012). Pupil wellbeing – Teacher wellbeing: Two sides of the same coin?. *Educational and Child Psychology, 29*(4), 8–17.

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology, 42*(1), 5–37.

Rothi, D., Leavey, G., & Loewenthal, K. (2010). *Teachers' mental health: A study exploring the experiences of teachers with work-related stress and mental health problems*. London, United Kingdom: NASUWT.

Rothmann, S. (2013). From happiness to flourishing at work: A Southern African perspective. In M. P. Wissing (Ed.), *Well-being research in South Africa, cross-cultural advances in positive psychology* (pp.123–151), Dordrecht. The Netherlands: Springer.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67.

Ryff, C. D., & Singer, B. (2003). Flourishing under fire: Resilience as a prototype of challenged thriving. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 15–36). Washington, DC: APA.

Sandilos, L. E., Goble, P., Rimm-Kaufman, S. E., & Pianta, R. C. (2018). Does professional development reduce the influence of teacher stress on teacher–child interactions in pre-kindergarten classrooms? *Early Childhood Research Quarterly, 42*, 280–290.

Seligman, M. E. (2011). Building resilience. *Harvard Business Review, 89*(4), 100–6.

Seligman, M. E. P. (1992). *Helplessness: On depression, development, and death*, San Francisco, CA: Freeman.

Singh, A., & Walia, G. S. (2004). *Health and Physical Education*. Vinod Publications: Ludhiana.

Skinner, E. A., & Zimmer-Gembeck, M. J. (2011). Perceived control and the development of coping. In S. Folkman (Ed.), *Oxford library of psychology. The Oxford handbook of stress, health, and coping* (pp. 35–59). New York, NY: Oxford University Press.

Smets, E., Pieterse, A. H., Aalfs, C. M., Ausems, M. G., & van Dulmen, A. M. (2006). The perceived personal control (PPC) questionnaire as an outcome of genetic counseling: Reliability and validity of the instrument. *American Journal of Medical Genetics Part A, 140*(8), 843–850.

Soini, T., Pyhältö, K., & Pietarinen, J. (2010). Pedagogical well- being: reflecting learning and well- being in teachers' work. *Teachers and teaching: Theory and practice*, *16*(6), 735–751.

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*(11), 1161–1173.

Taylor, S. E. (2011). Social support: A review. In H. S. Friedman (Ed.), *Oxford library of psychology. The Oxford handbook of health psychology* (pp. 189–214). New York, NY: Oxford University Press.

Thompson, S. C. (1981). A complex answer to a simple question: Will it hurt less if I can control it? *Psychological Bulletin*, *90*(1), 89–101.

Thompson, S. C. (2002). The role of personal control in adaptive functioning. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 202–213). New York, NY: Oxford University Press.

Thompson, S. C., & Schlehofer, M. M. (2008). Control, denial, and heightened sensitivity reactions to personal threat: Testing the generalizability of the threat orientation approach. *Personality and Social Psychology Bulletin*, *34*(8), 1070–1083.

Thompson, S.C. (2011). The role of personal control in adaptive functioning . In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 271–278). New York, NY: Oxford University Press.

Thyer, B. A. (2012). *Quasi-experimental research designs*. New York, NY: Oxford University Press.

Vesely, A. K., Saklofske, D. H., & Nordstokke, D. W. (2014). EI training and pre-service teacher wellbeing. *Personality and Individual Differences*, *65*, 81–85.

Wang, J., & Wang, X. (2012). *Structural equation modeling: Applications using Mplus.* Chichester, United Kingdom: Wiley.

West, S. G., Taylor, A. B., & Wu, W. (2012). Model fit and model selection in structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 209–231). New York, NY: The Guilford Press.

World Health Organization (WHO). (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report.* WHO, Victorian Health Promotion Foundation, University of Melbourne. Retrieved from http://www.who.int/mental_health/evidence/en/promoting_mhh.pdf

Chapter 5

Research conclusions, limitations and recommendations

Keywords: coping, coping strategies, intention to leave, perceived personal control, psycho-social well-being, stress.

Introduction

This study broadly aimed to investigate the stress of teachers in the South African teaching context; the ways in which they attempt to cope with their perceived stress; the influence that a personal sense of control may have on their stress and, lastly, the effects of stress, coping and personal control on the well-being and flourishing at work of the teachers who participated in this research. The research question that was initially posed to guide the research activities of the study was: would there be a beneficial or any other relationship between teachers' stress levels, their coping strategies, a sense of personal control and their well-being and flourishing at work; would their stress levels, coping strategies, a sense of personal control and well-being at work show significant variations after an interval of four months; would the variables used in the study predict the intention of teachers to leave the profession?

In this chapter, the conclusions based on the literature study and on the research conducted to answer the research question, as well as the limitations experienced and recommendations flowing from the research, are discussed. First, conclusions based on the literature review of the study will be given and, thereafter, conclusions stemming from the empirical research, will be presented.

Conclusions from the Literature Study

- From the problem statement that underpinned the study, it was concluded that although rewarding, teaching is considered exceptionally stressful (Newberry & Allsop, 2017). Teachers from several countries, including South Africa report high levels of stress (Skaalvik & Skaalvik, 2011), that result in undesirable outcomes on teaching and learning (Steyn & Kamper, 2006), which may lead to detrimental consequences for teachers' well-being (Olivier, & Venter, 2003). These high stress levels seem to influence teachers' intentions to leave the teaching profession (Newberry & Allsop, 2017).

  Regardless of the many changes that the South African education system has undergone during recent years, the complexity and intensity of the demands made on teachers and the pace of education transformation, many South African teachers still seem to cope, or even flourish in the profession (Fishman, 2014; Redelinghuys, 2016).
- The stress concept is approached in the literature from an array of viewpoints and perspectives and most of these are either theory or practice related. A basic assumption of all the different conceptualisations of stress seems to be that stress originates from various internal and external sources and leads to reactions in the physical and mental

states of the person. These states occur due to the interpretation of the person about the nature of the stress and his/her ability to deal with it. The outcome of the interpretation is an adaptive response process of thought, feeling and action in which the stress is either ignored or avoided, acknowledged but set aside or faced and acted on.

Research into teacher stress concludes that all South African teachers experience the demands made on them by the teaching context and respond to the stressful demands with vast individual differences ranging from being severely stressed, over a broad continuum, to being challenged and resourceful.

- Coping, also conceptualised from different theoretical frameworks or practice orientations, is viewed as the response, either active or passive, either internally or externally, to the stress experienced. Coping is a broadly perceived adaptive response to stress, with either defeating or enhancing outcomes and makes use of various coping strategies and abilities to manage (cope with) the person's stress.

  Teachers have been found to cope mostly with either active problem solving approaches or with emotional coping strategies and their coping behaviour is influenced by their characteristics, culture, coping experiences and subjective views of their coping competence. Successful adaptive coping of teachers buffers them against the effects of stress, leading to the development of skills and competencies to deal with the demands of the teaching context and to understand the source and nature of their stress (Ferreira & Ebersohn, 2012).

- Mental health, for the purpose of this study, was largely conceptualised by the complete mental health model of Keyes (2002), because it would seem that the emotional, psychological and social dimensions describing complete mental health, encompasses, to a large extent, the features of mental health given in other descriptions. The Keyes model, with the sub-dimensions of each dimension thereof, also represents all domains of human mental functioning.

  Teachers' mental health have been mostly conceptualised from a negative perspective and described as the outcome of the stress saturated educational context. Currently, teachers' mental health is viewed as low, or stress induced with symptoms such as psychosomatic headaches, hypertension and muscle tension, coupled with exhaustion, depression and obesity, anger, anxiety and frustration, to mention but a few. Conversely, teachers who succeed in dealing with educational adversity, have been described as resilient, energetic, determined, motivated and resourceful, with a minimum of the abovementioned ill-being symptoms (Grenville-Cleave & Boniwell, 2012).

- A sense of personal control is a fairly old theoretical construct from the 1980s that was reintroduced in 2011 by Skinner and Zimmer-Gembeck into, especially, the psychological field of coping. Although perceived personal control has specific features, it also has similarities to coping constructs and to dimensions such as a sense of self-efficacy, self-determination's autonomy, self-regulation and self-control, mastery and a sense of coherence, all human capabilities enabling stress management. A sense of personal control is a belief system about personal abilities to interact with the environment in ways that would ensure mastery and mostly manageable outcomes (Thompson, 2011).

  Since no research findings of teachers' perceived personal control was found, this study hoped to investigate this interesting and potentially empowering construct and to promote it for further research and application in psychology and the humanity sciences.
- Flourishing at work is the conceptual model of Rothmann (2013) that elaborated on the original Keyes (2005) model. Flourishing at work also has the dimensions of emotional, psychological and social well-being, but with work related sub-dimensions and is alternatively called well-being at work. A teacher who is flourishing at work displays work related positive effect, job satisfaction and low negative affect (emotional well-being); satisfaction with their autonomy, competence and relatedness at work, with their occupational learning, work meaningfulness and engagement (psychological well-being) and they show social acceptance, actualisation, contribution and integration in the work place (social well-being). Teachers who are flourishing at work have high levels of work engagement and functioning, good morale and low levels of absenteeism (Keyes, 2002; Rothmann, 2013).

Above, very brief conclusions about the theoretical constructs used in this study were described. More elaborated conclusions from the empirical research into the theoretical constructs, will be given in the following discussion.

Conclusions from the Empirical Research

The data collected for the research was done with N = 209 teachers completing questionnaires on perceived stress (PSS), coping strategies (COPE), perceived personal control (PPC), mental health (MHC-SF) and well-being or flourishing at work (FAWS-SF). Four months later, the same group of teachers, as was previously agreed with them, completed the same set of questionnaires.

The initial data gathering sessions with the teachers proceeded well, albeit at eight different schools. Teachers' attitudes were mostly positive and they found the questionnaires interesting. The school principals contributed, to a large extent, to the good nature of teachers by assisting in the practical arrangements and by arriving at each session and personally thanking their staff for participating.

The follow-up testing sessions four months later and the effort and organisation that it took gave the researcher a taste of what longitudinal research would entail. However, once more with the help of the school principals, the testing procedures were completed successfully. Although the participants initially complained about the re-testing, the mood that prevailed was largely tolerant and cooperative. The assistance of a research assistant was of great value. N = 242 sets of questionnaires were completed, but N = 209 could be used in the statistical analyses due to mistakes made in and incompleteness of questionnaires.

The data obtained from teacher participants were used in three data analyses projects, each with its own aim and objectives. The reports of research findings of each analysis, were presented by means of three articles intended for later publication in scientific journals. Conclusions based on these research reports will be given below, according to the themes and aims of each analysis.

Perceived stress and coping of teachers: a latent profile analysis (Manuscript 1).

This study was aimed at:

- Identifying stress profiles from the perceived stress scores of teachers, using a person-centred approach
- Determining the relations between stress profiles and coping strategies of teachers.

The most important findings were as follows:

- Four latent profiles for teachers were found, namely stress resisters (P1), manage stress (P2), stress overloaded (P3) and highly stressed (P4);
- Teachers identified as stress resisters and manage stress, scored significantly lower on the coping strategies of denial and disengagement, as well as self-blame, than those who showed stress-overloaded and highly stressed profiles.

It could be concluded that:

- Teachers are individuals with unique combinations of capabilities and experience in their teaching roles. This would manifest in the individual differences in and varied responses to the stress that they experience in the teaching context. Two of

the four latent stress profiles identified in this study showed that the participating teachers either resisted the stress impact by interpreting the demands as well-manageable, or they experienced the stress and found it to be moderately manageable. Close to half of the teachers (48%) were in these two profiles, indicating that they could manage the educational stress. The other two profiles representing the majority of participating teachers (52%) indicated that they either felt overloaded by stressful demands or that they were highly stressed in their everyday teaching context.

- The above mentioned finding supports the volumes of research about South African teachers' high levels of stress, but what it also shows is that close to half of the teachers find their stress either manageable, or they are stress resistant and are able to cope moderately to well with the demands of the educational context in which they operate. This phenomenon has not been as well-researched as the previously mentioned and more negative factor of high teacher stress levels. While it is imperative to understand and address the serious stress levels of teachers, one wonders if more attention should be paid to the factors enabling many teachers to manage and adapt to the demanding teaching context.
- The further finding that the stress overloaded and highly stressed profile teachers made use of denial, disengagement and self-blame as coping strategies, is seen as maladaptive coping that is self-focused by Scheier and Carver (1981), who are classical stress and coping researchers and theorists. The dynamic of this coping style, according to the authors, is that the energy is removed from the stressful task and centred on the self, which causes affective distress. In more recent research such affective distress seems to resonate with emotional exhaustion, that is a key dimension of burnout (Jackson & Rothmann, 2005) and that was found by numerous researchers in stress research with teachers (Skaalvik & Skaalvik, 2011). Could it be that the maladaptive and affective distressing coping strategies of some teachers may even contribute to their experience of burnout? Could it also be that investing in coping skills training for stressed teachers, may strengthen them towards more effective coping and problem solving (Heppner & Lee, 2009) in the teaching context?

Teachers' perceived stress, coping strategies, mental health at work and intention to leave the profession (Manuscript 2).

The study aimed to:

- Identify and test measurement and structural models for best statistical fit
- Determine reliabilities of and correlations between the identified factors as well as the practical effect sizes of correlations
- Predict mental health at work and the intention to leave the profession by teachers, by means of perceived stress and coping strategies
- Calculate the indirect effects of perceived stress through mental health on the intention to leave the profession.

The main findings were that:

- Measurement and structural models were identified that met the best statistical fit criteria.
- There were significantly medium and large effect sizes between correlations.
- Mental health of teachers was predicted by low negative stress and active coping strategies.
- Low mental health and high negative stress predicted the intention to leave the profession.
- Negative stress indirectly and positively had an effect through mental health on the intention to leave the profession.

It could be concluded that:

- The large and significant practical effects found indicated that in the practical educational context teachers seemingly interpreted (appraised) and responded to the stressors, either as being non-taxing and manageable (positive stress) or being taxing and unmanageable (negative stress). Those who experience positive stress, make use of active coping strategies and this combination strongly influences (predicts) their mental health. In turn, those who experience high negative stress (taxing and unmanageable) seem to have compromised mental health, are most likely languishing in the workplace (Keyes, 2005) and are those who are considering leaving the teaching profession.
- It was interesting that some of the classical psychology theories about stress, resonated in understanding the dynamics of the high levels of negative stress

found in the majority of teachers in this study (52%). The stress appraisal model of Lazarus and Folkman (1984), the fight or flight stress reaction model of Cannon (1932; Sapolsky, 1996) and the exhaustion reaction of the general adaptation syndrome of Hans Selye (1956) were all theoretically relevant to explaining the current phenomena of teacher stress in 2019.

- Equally, the burnout phenomenon, especially the emotional exhaustion dimension thereof as found in this study, is as applicable in the current South African educational context as it has been in 1982 when Maslach did his ground-breaking work.

Teachers' perceived stress, mental health, perceived personal control: the effects thereof on flourishing at work (Manuscript 3).

The study broadly aimed to:

- Identify best fitting measurement and structural models and the reliabilities and correlations of factors
- Identify latent profiles of perceived personal control of teachers and determine if perceived personal control affected their stress, mental health and flourishing at work
- Study the indirect effects of stress through mental health on teachers' flourishing at work.

The most important findings were:

- Regression coefficients showed that the impact of positive stress on mental health was twice as strong as that of negative stress.
- Stress in general (positive and negative) impacted on mental health of school teachers in the short term, but only mental health remained a predictor of flourishing at work in the long term.
- Two latent perceived personal control profiles were identified, in which 48% of teachers showed that they were doubtful of their personal control and 52% showed that they were confident about their personal control.
- Teachers who are confident about their personal control showed significantly less negative stress and higher levels of mental health and well-being at work than their colleagues who were doubtful of their personal control.
- The indirect effects of negative stress through mental health on psychological well-being at work and of positive stress on emotional, psychological and social well-being at work, suggested that teachers who experience positive stress are more

mentally healthy, which results in them experiencing higher emotional well-being (job satisfaction and positive affect), psychological well-being (autonomy, competence and relatedness satisfaction, learning, meaningful work and work engagement) and social well-being at work.

It could be concluded that:

- Stress remains one of the strongest determinants of mental health and seemingly more so in the teaching context, as shown by this study and in line with numerous others in South Africa. One wonders about the aloofness of the Department of Education in this regard, since intervention programmes to teach effective coping skills (Folkman et al., 1991) are freely available (Heppner & Lee, 2009) and the practical organisation to present such support to their teachers, could be done within the existing educational infrastructure.
- It was interesting that mental health, with its components of emotional, psychological and social well-being and not the single stress management dimension thereof, had the long-term influence on flourishing at work. Despite the strong negative influence of stress, it would seem that mental health has operating features that could buffer against the impact of stress in the long run.
- The latent personal control profiles identified, is an outstanding finding since no profile analyses on the PPC scale used could be found in an electronic search and profile analyses with the PPC construct revealed only that of Skinner and Zimmer-Gembeck (2011), reported on in this study.
- The fact that profile membership in this study was 52% for confident personal control (positive) and 48% for doubtful personal control (negative), is the opposite to what was found in the first study of this thesis, namely that stress resisters and those who could manage stress were 48% and overloaded and highly stressed teachers were 52% of this teacher sample. This calls for research on the dynamics of a sense of personal control in relation to the experiencing of stress. Perceived personal control theory (Peterson, 1999; Thompson, 20011 indicates that a sense of personal control could be learned and that learned coping efficacy (active and constructive coping) is a pathway.

Although the broad research conducted in this study was thorough and met the aims posed, some limitations were observed.

Limitations of and Related Recommendations from the Study

Certain limitations of this study need to be acknowledged in relation to recommended future research directions;

- The small sample size, due to the limited number of teachers in each school, may have influenced the results. Future research needs to include larger samples to develop a comprehensive understanding of teachers' perceived stress experienced in a challenging work environment and the coping strategies and other psychological strengths that enable some teachers to stay and flourish in the profession.
- The results were obtained mostly by means of self-report measures, which limit the information about teachers' perceptions of stress and their ability to cope. Future studies could utilise multiple data sources to eliminate the effects associated with common method variance and to provide more information about the phenomenon,
- This study did not consider cultural differences with regard to perceived stress, coping strategies, personal control and well-being in general and at work. Future research could focus on cross-cultural and intracultural comparisons in order to clarify the differences regarding these constructs in various cultural groups and between these groups. It is recommended that the study be performed on more populations from different races and cultural heritages in South Africa.
- The questionnaires used in this study to assess important psychological concepts, such as perceived stress, mental health, perceived personal control and emotional, psychological and social well-being or flourishing at work, were all in English, not the first language of most of the participants. Since such questionnaires tap into sensitive features of teachers' work life experiences, it is recommended that, in future research of this nature, the questionnaires should be in the language of the respondents. For further research in South Africa, it is recommended that these questionnaires should be translated into all 11 languages of the country.
- The medium to large practical effect sizes found for most of the correlations between latent variables, were surprising and seemingly gave some perspective on the work context of the participants in this study. However, sizes only have bearing on a sample in a specific context and, therefore, it is recommended that this research is replicated in other teaching contexts with larger numbers of participants. Thereby comparisons of studies according to the practical effect sizes obtained for them could be done in

order to obtain some indication of a bigger picture of stress, coping, mental health at work and the intention to leave the profession, of teachers in South Africa.

- In further research the effect of active coping on teachers' perceived stress, mental health at work and intention to leave could be done, since the active coping results found in this study were, although significant, very low.
- The stress and coping constructs could be combined with appraisal and explanatory style constructs and the relationships between the measurements operationalising these constructs could be investigated.
- Further research on the perceived personal control construct is recommended to investigate how it is conceptualised and responded to in the broad South African socio-cultural context. A measurement of perceived personal control could be developed and validated in a South African context.
- Longitudinal research was done in this study by re-assessing all the variables used after a four-month interval with the same group of teachers. However, the constructs researched in this study are rich and represent such important psychological aspects and domains of human behaviour, that they lend themselves for further longitudinal and mixed method research designs.
- Many of the findings in this research were first-time findings, which call for replication studies to further support, refine or reject the current findings. Qualitative research into an understanding of teachers' stress appraisal styles and their perceived personal control in the educational context could be recommended, especially with teachers who are either doubtful or confident in their personal control.
- Practical interventions based on the findings of this and other studies with variables like those used in this study could be developed, implemented and validated in order to assist teachers in managing and constructively coping with the stress they face.
- Since the stress factor will remain a variable in the teaching and teacher well-being equation in South Africa, the development of enabling mechanisms and support systems for present and future teachers are recommended.

Contributions of the Study

This research has theoretical and practical contributions to make to the field of psychology.

Theoretical contributions

- The theoretical constructs of perceived stress, coping strategies, complete mental health, perceived personal control and flourishing at work, operationalised by means of the

measurements used in this research, have not been researched in this theoretical combination before, as far as could be determined. The reliabilities, correlations and statistical relations found for these variables in a South African teaching context are unique.

- The latent profiles identified for a South African group of teachers on perceived stress in the teaching context and on their perceived sense of personal control thereof, is a new and unique finding. It contributes to a better understanding of the two constructs researched, the context in which they were applied and the participants who formed the profiles. Very few published research reports on the latent profile analyses of these constructs could be found.
- Perceived personal control (PPC) is a fairly old theoretical construct that was brought back into practice and research by the outstanding chapter of Skinner and Zimmer-Gembeck (2011). However, since 2011 very few research findings with the PPC construct have been published. This study, in choosing to use the PPC construct, hoped to place the focus on a very interesting dimension of human behaviour, that is currently calling for further research and application.
- Perceived stress of teachers, both positive stress and negative stress, proved to be a prominent variable in this research, associated with the other variables in various statistical interpretations. A primary feature about the perceived stress in this study, was how it was appraised and what the outcome of the appraisal was. The interpretation of the findings about stress lead to the rediscovery of the old classic stress theories such as the 1984 transactional model of stress and coping of Lazarus and Folkman, the fight or flight stress reaction model of Cannon (1932), the general adaptation syndrome of Selye (1956) and the burnout models of Maslach (1982). It is hoped that these old theoretical conceptualisations of the stress phenomenon and its outcomes, will be brought back into modern research.

Practical contributions

- The findings showed that only about the half (52%) of this sample of teachers experienced severe stress and not as many as reported in other research. Interestingly, also 52% of the teachers indicated that they had a sense of perceived personal control over the stressful situations that they encounter. These findings, linked to the other findings predicting the mental health, flourishing at work and intention to leave the profession of these teachers, could be used to propose to the Department of Education

that support programmes be offered to teachers. Such interventions could aim to strengthen teachers in managing educational demands, growing in their coping abilities thereof, as well as in having a sense of personal control. The outcome of such interventions could be for teachers to increasingly flourish at work.

- On a smaller scale and as community service, the researcher, a registered educational counsellor, and other such professional service providers, could offer training programmes, workshops and interventions in promoting problem solving, effective and constructive coping strategies and a sense of personal control to teachers. These features of human behaviour are known to be open to growth and learning (Lyubomirski, 2011; Seligman, 2011).

Conclusion

This study aimed at investigating teachers' stress in the South African teaching context, their strategies to cope, their mental health, perceived personal control, their flourishing at work and their intention to leave the teaching profession. The aim was successfully achieved and the spirit of the findings of this research support the view of Rothmann (2015), that educators are the change agents in the conceptual age, and they should be regarded as valuable human capital for the South African educational society. Every effort should be made for them to feel and function well in the classroom as they play a crucial role in shaping and guiding the lives of our nation's children.

"*Everybody who remembers his own education remembers teachers, not methods and techniques. The teacher is the heart of the educational system"* – Sidney Hook

References

Cannon, W. B. (1932). *The wisdom of the body.* New York, NY: Norton.

Ferreira, R., & Ebersöhn, L. (2012). *Partnering for resilience.* Pretoria, South Africa: Van Schaik.

Fishman, E. J. (2014). With great control comes great responsibility: The relationship between perceived academic control, student responsibility, and self- regulation. *British Journal of Educational Psychology*, *84*(4), 685–702.

Folkman, S., Chesney, M., McKusice, L., Ironson, G., Johnson, D. S., & Coates, T. J. (1991). Translating coping theory into intervention. In J. Eckenrode (Ed.), *The social outcomes of coping* (pp. 239–259). New York, NY: Plenum.

Grenville-Cleave, B., & Boniwell, I. (2012). Surviving or thriving: Do teachers have lower perceived control and well-being than other professions? *Management in Education, 26*(1), 3–5.

Heppner, P. P., & Lee, D. G. (2009). Problem solving appraisal and psychological adjustment. In S. J. Lopez (Eds.), *Handbook of positive psychology* (2nd ed.) (pp. 288–298). New York, NY: Oxford University Press.

Jackson, L. T. B., & Rothmann, S. (2005). Work-related well-being of educators in a district of the North West Province. *Perspectives in Education*, *23*(3), 107–122.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*(2), 207–222.

Keyes, C. L. M. (2005). Chronic physical conditions and aging: Is mental health a potential protective factor? *Aging International*, *30*(1), 88–104.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Lyubomirsky, S. (2011*).* Hedonic adaptation to positive and negative experiences. In S. Folkman (Ed.), *Oxford handbook of stress, health, and coping* (pp. 200–224). New York, NY: Oxford University Press.

Maslach, C. (1982). *Burnout: The cost of caring.* Englewood Cliffs, NJ: Prentice-Hall.

Newberry, M., & Allsop, A. (2017). Teacher attrition in the USA: the relational elements in a Utah case study. *Teachers and Teaching, 23:8,* 863–880.

Olivier, M. A. J., & Venter, D. J. L. (2003). The extent and causes of stress in teachers in the George region. *South African Journal of Education*, *23*(3), 186–192.

Peterson, C. (1999). Personal control and well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 288–301). New York, NY: Russel Sage Foundation.

Redelinghuys, J. J. K. (2016). *Flourishing of teachers in secondary schools* (Doctoral dissertation, North-West University (South Africa), Vaal Triangle Campus).

Rothmann, S. (2013). From happiness to flourishing at work: A Southern African perspective. In M. P. Wissing (Ed.), *Well-being research in South Africa, cross-cultural advances in positive psychology* (pp.123–151), Dordrecht, The Netherlands: Springer.

Rothmann, S. (2015). *Flourishing of educators in South Africa.* Paper presented at the International Association of Cognitive Education (IACESA) Conference, Cape Town, South Africa.

Sapolsky, R. M. (1996). Why stress is bad for your brain. *Science*, *273*(5276), 749–750.

Scheier, M. F., & Carver, C. S. (1981). Private and public aspects of self. *Review of Personality and Social Psychology*, *2*, 189-216.

Seligman, M. E. (2011). Building resilience. *Harvard business review*, *89*(4), 100–106.

Selye, H. (1956). *The stress of life.* New York, NY: McGraw- Hill.

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, *27*(6), 1029–1038.

Skinner, E. A., & Zimmer-Gembeck, M. J. (2011). Perceived control and the development of coping. In S. Folkman (Ed.), *Oxford library of psychology. The Oxford handbook of stress, health, and coping* (pp. 35–59). New York, NY: Oxford University Press.

Steyn, G. M., & Kamper, G. D. (2006). Understanding occupational stress among educators: an overview. *Africa Education Review*, *3*(1-2), 113–133.

Thompson, S. C. (2011). The role of personal control in adaptive functioning. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 271–278). New York, NY: Oxford University Press.