

**BURNOUT OF PRIMARY SCHOOL TEACHERS
IN THE
NORTH WEST PROVINCE**

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COMMENTS

The reader should keep the following in mind:

- The editorial style as well as the references referred to in this mini dissertation follow the format prescribed by the Publication Manual (4th edition) of the American Psychological Association (APA). This practice is in line with the policy of the Programme in Industrial Psychology of the PU for CHE to use APA style in all scientific documents as from January 1999.
- The mini-dissertation is submitted in the form of a research article. The editorial style specified by the South African journal of Industrial Psychology (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing tables.

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I climbed the hill and I made it! I may be able to write my name on the cover of this mini dissertation, but it would not have been possible without a large degree of love, support and guidance. This page has been set aside for me to say a big thank you to the following people who helped me to the finishing line...

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ABSTRACT

Title: Burnout of primary school teachers in the North West Province

Key terms: Burnout, exhaustion, cynicism, professional efficacy, job characteristics, strain, teachers

The foundation of the education of our country lies in the hands of the primary school teachers. Unfortunately, teachers have to juggle many roles – not only are they expected to teach diverse classes and be a role model, but they also have to deal with social problems - all for very little remuneration. Our teachers are becoming less motivated, frustrated and very despondent and as a result, an increasing number of teachers are suffering from burnout.

The objective of this research was to investigate the job characteristics associated with burnout as well as the burnout-strain relationship among primary school teachers in the North-West Province. A stratified random sample of 646 primary school teachers in the North West Province was taken. The Maslach Burnout Inventory – General Survey (MBI-GS), Job Characteristics Scale and Your Health Questionnaire (third questionnaire of the ASSET) were used as measuring instruments. Cronbach alpha coefficients, inter-item correlation coefficients, Pearson-product correlation coefficients and canonical correlation coefficients were used to analyse the data. Structural equation modelling (SEM) methods were used to construct job characteristic models of burnout.

The results showed that overload leads to exhaustion, which leads to cynicism and in turn to lack of professional efficacy. Job resources was found to be related to all three dimensions of burnout, while rewards played a moderating effect between both overload and exhaustion, and job resources and burnout. Exhaustion and lack of professional efficacy lead to physical and psychological strain.

Recommendations were made for further research.

OPSOMMING

Titel: Uitbranding van laerskoolonderwysers in die Noordwes-Provinsie

Sleuteltermes: Uitbranding, uitputting, sinisme, professionele doeltreffendheid, onderwysers, spanning.

Die grondslag van ons land se opvoeding lê in die hande van laerskoolonderwysers, maar ongelukkig word daar van onderwysers verwag om 'n verskeidenheid van rolle te vervul, diverse klasse te onderrig en boonop maatskaplike probleme te hanteer. Onderwysers moet al hierdie take verrig teen betreklik min finansiële vergoeding. Ons onderwysers is besig om al minder gemotiveerd en toenemend gefrustreerd te word. Hulle ervaar dus simptome van uitbranding.

Die doelstelling van hierdie navorsing was om die werkseienskappe te ondersoek wat met uitbranding geassosieer word, asook die uitbranding-spanning-verhouding onder laerskoolonderwysers in die Noordwes-Provinsie. In 'n gestratifiseerde ewekansige steekproef ($n= 646$) onder laerskoolonderwysers in die Noordwes-Provinsie is die Maslach-Uitbrandingsvraelys - Algemene Opname, Werkseienskappe-Vraelys en Jou Gesondheid-Vraelys (derde vraelys van die ASSET) as meetinstrumente gebruik. Die Pearson-produkmoment-korrelasie-koëffisiënte en kanoniese korrelasie-koëffisiënte is gebruik om die data te ontleed. Strukturele vergelykingsmodellering (SEM) is gebruik om hanteringsmodelle van uitbranding te konstrueer.

Die resultate het getoon dat oorlading tot uitputting lei - wat tot sinisme lei - wat weer tot laer vlakke van professionele bekwaamheid lei. Beperkte werkhulpbronne lei tot hoër vlakke van uitputting en sinisme asook laer vlakke van professionele bekwaamheid. Belonings het 'n modererende effek tussen oorlading en uitputting asook tussen werkhulpbronne en uitbranding. Uitputting en profesionele onbekwaamheid lei tot fisiese en psigologiese spanning.

Aanbevelings vir toekomstige navorsing is aan die hand gedoen.

CHAPTER 1

INTRODUCTION

This mini-dissertation focuses on the relationship between job characteristics and burnout as well as the relationship between burnout and stress among primary schoolteachers in the North West Province.

This chapter contains the problem statement and a discussion of the research objectives, in which the general objective and specific objectives are set out. The research method is explained and the division of chapters given.

1.1 PROBLEM STATEMENT

South Africa has undergone vast changes over the past decade and all organisations, professions and individuals have had to adapt to a new way of life within a new democratic country. Organisations continuously face changes such as technological advancements, market changes and social and political pressures (Kreitner & Kinicki, 2001). Apart from these 'normal' changes, organisations and professions in South Africa have experienced a vast number of other changes brought about by affirmative action, democracy, and diversity. These changes have had numerous implications.

The teaching profession is generally regarded as one of the most stressful professions in the world. Titles in newspaper articles such as 'Stress takes big toll on teachers' (Jacobs, 2002), 'Workload' (Workload, 2002) and 'Stressed or not, absent teachers won't get paid' (Pretoria Correspondent, 2000) give an indication of the reality of the stress-related problems in the teaching profession in South Africa. Teachers complain that stress has become part of their lives and that they feel overwhelmed by the amount of work they have to do. Teaching is an incredibly demanding occupation, and over the recent years, these demands have increased. According to McDonald and Van der Linde (1993), primary school teachers sometimes have to handle very

large classes of approximately 40 pupils, which places a lot of pressure on the teacher. Township teachers say they are experiencing even more stress compared to teachers in other areas (It can be worse in townships, 2002). They complain that in conjunction with teaching demands, they also have to deal with social problems. Policy changes and transformation in the education sector, lack of discipline in schools, an increasing workload, low pay and various other conditions in the teaching domain have resulted in an increasing number of stressed teachers in South Africa (Jacobs, 2002).

The changes experienced by the teaching profession include the move from nineteen departments of education to one national department and nine provincial departments of education, as well as the transformation of mono-cultural schools into multicultural schools (Myburgh & Poggenpoel, 2002). Teachers have also had to deal with the pressure caused by the rationalisation process, retrenchment, and redeployment.

According to Professor Jonathan Jansen, dean of the Faculty of Education at the University of Pretoria, teachers have had to deal with 23 different - and sometimes contradictory - policies since 1994 (Jacobs, 2002). The political changes in the country have forced teachers to adapt to a new reality (Van Zyl & Pietersen, 1999). According to Myburgh and Poggenpoel (2002) the transformation in the education system seems to have confused teachers as to what their roles and even their own identities are, resulting in stress-related problems. These problems can lead to various forms of destructive behaviour, such as alcohol abuse, absenteeism, as well as destructive relations between teachers and learners, teachers and colleagues and teachers and their families (Myburgh & Poggenpoel, 2002). The fast-paced changes in the teaching profession have also, according to Jansen, increased the levels of stress among teachers (Jacobs, 2002). Myburgh and Poggenpoel (2002) mentions that change may lead to uncertainty, stress and burnout.

A number of studies on burnout have been conducted in the teaching profession, probably because it is one of the largest and most visible professions in society (Whitehead, Ryba & O'Driscoll, 2000). The results have shown that large numbers of teachers are experiencing

symptoms of stress and burnout (Burke & Greenglass, 1995; Friedman, 2000; Whitehead, Ryba & O'Driscoll, 2000).

Teachers not only play a vital role in the education of a country, but they also contribute to the economic growth and development thereof. The adverse effects of teachers who suffer from burnout and stress could have a significantly negative effect on pupils' growth and learning capacity.

Burnout seems to be an increasing problem in the teaching profession (Mesthri, 1999). Teachers are faced with various tasks to complete, pupils to attend to and conflicting demands. Friedman (2000) explains that teachers often have to lower their expectations regarding these various tasks, and instead start to focus on the objectives of the school, based on the curriculum. This leads to feelings of frustration, lack of accomplishment and eventually exhaustion and burnout. These teachers may consider leaving teaching or they may merely struggle along under the burden of their work. Teachers who suffer from burnout symptoms may be less sympathetic towards students, have lower tolerance for frustration in the classroom, prepare for their classes less often or less carefully, fantasise about or actually plan on leaving the profession and frequently feel emotionally or physically exhausted. They may be less committed and dedicated to their work (Farber, 1984).

The increasing number of teachers suffering from burnout symptoms can lead to a decline in education in South Africa, in turn affecting the future of our country. Burnout affects teachers' performance as they become less motivated, patient and optimistic and start to look for ways to reduce their involvement with pupils (Pines, 2002). Although it is obvious that burnout in the teaching profession has vast implications for the education of a country, there seems to be a lack of research on teacher burnout in South Africa - which is probably mainly due to the country's multicultural society.

Burnout is a metaphor commonly used to describe a state or process of mental exhaustion (Schaufeli & Enzmann, 1998). Research on burnout dates back to the 1970's (Freudenberger, 1974; Maslach, 1976), concentrating on the caregiving and service occupations. The next two

decades are regarded as the empirical phase of the study of burnout, during which several measuring instruments were developed.

The most widely used measuring instrument is the Maslach Burnout Inventory (MBI). The creators of the MBI define burnout as a syndrome of physical and emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who work with people in some capacity (Maslach & Jackson, 1984). However, a "working" definition of burnout was presented by Schaufeli & Enzmann (1998) in which the burnout phenomenon is described as a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work

Burnout - which can therefore be classified by emotional and interpersonal stressors – was initially associated only with those who work in the caring professions (Maslach, Schaufeli & Leiter, 2001). However, Schaufeli, Matinex, Pinto, Salanova and Bakker (2002) explain that burnout is no longer restricted to the caring professions and that all types of professions and occupational groups can experience burnout. The apparent need for an instrument that measures burnout in non-contactual professional contexts was met by the introduction of the Maslach Burnout Inventory – General Survey (Schaufeli, Leiter, Maslach and Jackson, 1996) which is an adapted version of the original MBI. The MBI-GS consists of three dimensions:

- **Exhaustion** refers to feelings of fatigue, but without reference to people as the source of those feelings;
- **Cynicism** can be seen as an indifference or aloof attitude towards one's work in general where the items refer to work itself rather than to recipients of one's service or personal relationships at work;
- **Professional Efficacy** encompasses both social and non-social accomplishments at work.

Symptoms of burnout include low energy, feelings of lack of control and helplessness, lowered motivation to engage in work and a negative attitude towards the self, work and others (Levert, Lucas & Ortlepp, 2000). It has been noted that the symptoms of burnout are similar to depression

(Gold, 1985), such as feelings of hopelessness, helplessness, emptiness, fatigue, frustration and irritability. Depression is most often accompanied by guilt, whereas burnout generally occurs in the context of conscious anger (Gold, 1985). Confusion sometimes exists between the terms stress and burnout. Stress is pressure that is placed on the individual, the effects of such pressure and the individual's response to this pressure (Borg, 1990). Burnout refers to the chronic condition that occurs when demands exceed an individual's abilities to cope, resulting in psychological, emotional, and physical withdrawal from the stressful activity (Smith, 1986). Burnout is therefore often the result of feeling stressed and not having a 'way out' or some type of support system. It is seen as the final step after many unsuccessful attempts to cope with a variety of negative stress conditions (Gold, 1985).

Burnout is an individual experience that is specific to the work context (Maslach et al, 2001). Factors such as coping strategies, personality factors, organisational characteristics and job characteristics influence burnout in the individual (Schaufeli & Enzmann, 1998). This study will focus on the influence of job characteristics on burnout. Job characteristics are stressors that are associated with the performance of specific tasks that make up an individual's job (Kahn & Byosiere, 1990). Various job characteristics that teachers complain about is: inadequate working conditions, role conflict and ambiguity, pupil problems, time pressures, the threat of redundancy, work pressure, little participation in decision-making and distribution of tasks, stereotypes and discrimination against minority groups, lack of support from parents, as well as inadequate salaries (Jacobs, 2002; Workload, 2000).

According to research (Brown & Ralph, 1992; Cooper & Kelly, 1993) the main stressors in the teaching field are: work role (workload, class sizes, administrative demands); role conflict and ambiguity (conflicting demands, school-community conflict, teacher's role as counsellor); lack of recognition; poor physical environment and resources (noise, geographic isolation); lack of control and decision-making power (bureaucratic structure); poor communication and the emotional demands of teaching (its complexity, high-quality teaching performances, student misbehaviour, dealing with students of different backgrounds, culture and gender).

Maslach et al. (2001) divides the job characteristics into two groups, namely job demands and job resources. Job demands are those aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Various types of job demands, such as work-overload, time pressures and various task characteristics have been found to be related to burnout, especially the exhaustion dimension (Maslach et al., 2001). Workload is a main stressor for many workers and both work-overload as well as work-underload can cause burnout. Cooper, Dewe and O'Driscoll (2001) explain that workload can be divided into quantitative and qualitative. Quantitative workload is the amount of work required and the timeframe in which the work must be done. Qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs (Cooper et al., 2001).

Job resources - the second dimension of job characteristics - refer to those aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal growth and development (Demerouti et al., 2001). The absence of job resources, such as the lack of social support, lack of job security, few rewards for work done and low participative management have also been linked to burnout through recent research done by Maslach et al. (2001). A lack of feedback and control are other job resources that are related to burnout, as well as the degree of decision-making power influences and a lack of autonomy (Maslach et al., 2001).

To test the relationship of job demands and resources with burnout, Demerouti et al. (2001) developed the Job Demands-Resources (JD-R) model of burnout. Their findings suggest that high job demands will lead to the experience of increased exhaustion. When job resources are lacking, they predict high levels of disengagement (that closely resemble cynicism as measured by the MBI-GS). According to Maslach et al. (2001), job demands and a lack of resources could lead to higher levels of burnout, but that burnout could also be an important mediator with various outcomes, one of them being the experience of strain.

It is important to differentiate between stressors, stress, and strain. Stressors are the stress-producing events or conditions in the work environment, while strains refer to the individuals'

responses to such stressor stimuli that are deemed harmful to themselves (such as poor mental or physical health or wellbeing). Stress is a more general term describing situations in which stressors and strains are present (Beehr, 1998). The work stressors may influence the workers' levels of strain (Cooper et al, 2001).

According to Jex and Beehr (1991) the major job strains can be classified as psychological, physical and behavioural.

Psychological job strains are the emotional reaction and attitudinal reaction (such as job dissatisfaction) to the job stressor. Psychological strains strongly correlate with work-related stressors (Jex and Beehr, 1991). According to Cooper et al. (2001) the most important measures of this type of strain is job dissatisfaction and tension/anxiety. Jackson and Schuler (1985) have classified the measures of job dissatisfaction into subcategories, which include general dissatisfaction, dissatisfaction with work, co-workers, pay, and promotion. Researchers have only recently explored physiological responses to strain.

The second type of strain, physical strain, is a physiological reaction, which can be long or short-term based. According to Jex and Beehr (1991) there are three types of physiological indicators of this type of strain: cardiovascular symptoms, biochemical symptoms, and gastrointestinal symptoms. Some stressors may not necessarily cause physiological strain immediately, but only in the future (Cooper et al., 2001).

Behavioural strains are the behaviours caused in response to the job stressor, such as seeking other employment. Behavioural strain is the least researched type of strain (Jex & Beehr, 1991; Beehr, 1999), although this type of response may have high costs in organisations. In this study, the focus will be on the psychological and physiological strains because of the lack of current research on behavioural strain.

Jenkins and Calhoun (1991) describe physical effects of stress (e.g. physical strain) as frequent headaches, sleep disturbances, hypertension, fatigue and tightening of muscles.

Psychological/emotional effects include general uneasiness, depression, nervousness, anxiety, and loss of confidence.

Maslach (2000) explains that the long-term strain is a physical illness, such as heart disease because of stress. Short-term strains can be an increase in blood pressure or suppression of the immune response. According to Maslach (2000), certain job characteristics lead to certain reactions such as burnout, which in turn leads to job strains. The demand-control model of Demerouti et al., (2001) proposes that the joint effects of demands and resources is important in predicting burnout, which could again lead to strain outcomes. According to Karasek (1979), high job demands are not harmful in themselves, but when accompanied by low decision latitude will result in psychological strain and is detrimental to employee health. Immediate reactions to strain include job dissatisfaction and depression, and long-term exposure can lead to stress-related illnesses (cardiovascular disease).

Based on the above discussion, it is clear that certain job characteristics (e.g. job demands and a lack of resources) could lead to burnout. Burnout itself could then again lead to the experience of strain. The objective of this study is to determine which job characteristics could lead to burnout and to determine the relationship between burnout and physical and psychological strain within the teaching profession.

The following research questions emerge from the problem statement:

- How is the relationship between job characteristics, burnout and strain conceptualised in the literature?
- Which job characteristics could influence burnout?
- What is the relationship between burnout and physical and psychological strain?
- What recommendations can be made to prevent and/or manage burnout of teachers in the North West Province?
- What recommendations can be made for future research regarding burnout?

1.2 RESEARCH OBJECTIVES

The research objectives consist of a general objective and specific objectives.

1.2.1 General objectives

The general aim of this research is to investigate the job characteristics associated with burnout as well as the burnout-strain relationship among primary school teachers in the Northwest Province.

1.2.2 Specific objectives

The specific objectives in this research are the following:

- To conceptualise the relationship between job characteristics, burnout and strain in the literature.
- To determine which job characteristics could influence burnout.
- To determine the relationship between burnout and physical and psychological strain.
- To make recommendations to prevent and/or manage burnout of teachers in the Northwest Province.
- To make recommendations for future research.

1.3 RESEARCH METHOD

The research method consists of a literature review and an empirical study. The results obtained from the research will be presented in an article format. Because separate chapters were not targeted for literature reviews, this paragraph focuses on aspects relevant to the empirical study that was conducted. The reader should note that a brief literature review was compiled for the purpose of the article.

1.3.1 Research design

A cross-sectional survey design is used in order to collect the data and to obtain the research objectives. A sample is drawn from a population at one time and a field experiment will be conducted to ensure that the conclusions which are obtained can be generalised more effectively to the whole population (Spector, 2000). This design is also used to determine the inter-relationships among variables within a population and will thus help to achieve the various specific objectives of the research.

1.3.2 Study population

The participants used in the research will be selected randomly from the population. Spector (2000) states that the random process will increase the accuracy of the conclusions made regarding the whole group. A stratified, random sample will be taken of teachers in public schools in the North West Province in South Africa. The strata used will be divided into three groups namely 1) the district (there are 12 districts in the province), 2) the type of school according to funding, and 3) the size of the school.

1.3.3 Measuring battery

The following questionnaires are utilised in the empirical study:

- The *Maslach Burnout Inventory-General Survey* (Schaufeli et al., 1996) is used to measure burnout. The MBI-GS consists of 16 items which then produces three scores: 1) Exhaustion (Ex) (five items; e.g. "I feel used up at the end of the workday"), 2) Cynicism (Cy) (five items; e.g. "I have become less enthusiastic about my work") and 3) Professional Efficacy (PE) (six items; e.g. "In my opinion, I am good at my job"). Schaufeli et al. (1996) reported that internal consistencies (Cronbach coefficient alphas) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy). All items are scored on a 7-point frequency rating scale ranging from 0 ("never")

to 6 (“always”). High scores on Exhaustion and Cynicism and low scores on Professional Efficacy are indicative of burnout. In addition, the items of the Depersonalisation sub-scale of the Maslach Burnout Inventory – Educator Survey (MBI-ES) is used to determine distant feelings and impersonal response towards recipients of the teachers’ service.

- *The “Your Health Questionnaire”* (part of the ASSET) (Cartwright & Cooper 2002) will be used to measure the levels of health among the primary school teachers. Cartwright and Cooper (2002) designed the ASSET as an initial screening tool, which is based on a large body of academic and empirical research, in order to help organisations assess the risk of stress in their workforce. The ASSET is divided into four questionnaires, of which the fourth is a biographical questionnaire. The first questionnaire measures the individual’s perception of his or her job; the second questionnaire measures the individual’s attitude toward his or her organisation, and the third questionnaire, “*Your Health*”, assesses the respondent’s level of health. It consists of 19 items arranged on two subscales, Physical Health and Psychological Wellbeing. According to the Asset model and the research on which it is based, poor employee health can indicate excessive workplace pressure and experienced stress, which can be used to ascertain if workplace pressures have positive and motivating or negative and damaging effects. The two subscales are physical health and psychological wellbeing. All the items on the physical health subscale relate to physical symptoms of stress. The role of this subscale is to give an insight into physical health, not an in-depth clinical diagnosis. The items listed on the psychological wellbeing subscale are symptoms of stress-induced mental ill health. Reliability is based on Guttman split-half coefficient. All but two factors returned coefficients of more than 0,70, ranging from 0,60 to 0,91 (Cartwright & Cooper, 2002).
- *The Job Characteristics Scale (JCS)* will be used to measure the specific job characteristics within the teaching profession. This questionnaire was developed by the authors to measure job demands and job resources for teachers. The JCS consists of 48 items and the questions are rated on a 4-point scale ranging from 1 (“never”) to 4 (“always”). The dimensions of the JCS include pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with

immediate supervisor, ambiguities about work, information, communications, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities.

1.3.4 Statistical Analysis

The statistical analysis is carried out with the help of the SAS program (SAS Institute, 2000). Principal factor extraction with varimax rotation is performed through SAS FACTOR on the items of the MBI-GS, Job Characteristics Scale, and Your Health (third questionnaire of the ASSET) performing structural equation modelling. Principal components extraction is used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Furthermore, the oblique method with a promax rotation is used to determine the inter-factor correlations of each measuring instrument. If correlations higher than 0,30 are found, this method is used to extract the factor structure.

Cronbach alpha coefficients and inter-item correlations are used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. According to Clark and Watson (1995), the average inter-item correlation coefficient (which is a straightforward measure of internal consistency) is a useful index to supplement information supplied by coefficient alpha. However, unidimensionality of a scale cannot be ensured simply by focusing on the mean inter-item correlation – it is necessary to examine the range and distribution of these correlations as well.

The level of statistical significance is set at $p \leq 0,05$. Effect sizes are used to decide on the significance of the findings. Pearson and Spearman product-moment correlation coefficients are used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients.

Canonical correlation is used to determine the relationships between job characteristics and burnout and between burnout and strain. The goal of canonical correlation is to analyse the

relationship between two sets of variables (Tabachnick & Fidell, 2001). Canonical correlation is considered a descriptive technique rather than a hypothesis-testing procedure.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) are used to test the factor structures of the questionnaires and to construct a causal model of burnout. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). A structural equations approach allows a model to be stipulated in advance of the data being examined. The model may then be tested for its goodness of fit to the covariance matrix of the measured variables, using a number of testing procedures. Competing models may also be tested, and decisions made about the model, which is most appropriate for the data set (Deary, 1996).

The following goodness-of-fit indices were used to summarize the degree of correspondence between the implied and observed covariance matrices:

Hypothesised relationships are tested empirically for goodness of fit with the sample data. The χ^2 statistic and several other goodness-of-fit indices summarise the degree of correspondence between the implied and observed covariance matrices. Jöreskog and Sörbom (1993) suggest that the χ^2 value may be considered more appropriately as a badness-of-fit rather than as a goodness-of-fit measure in the sense that a small χ^2 value is indicative of good fit. However, because the χ^2 statistic equals $(N - 1)F_{\min}$, this value tends to be substantial when the model does not hold and the sample size is large (Byrne, 2001).

The Goodness-of-Fit-Index (GFI) indicates the relative amount of the variances/co-variances in the sample predicted by the estimates of the population. It usually varies between 0 and 1 and a result of 0,90 or above indicates a good model fit.

In addition, the Adjusted Goodness-of-Fit Index (AGFI) is given. The AGFI is a measure of the relative amount of variance accounted for by the model, corrected for the degrees of freedom in the model relative to the number of variables. The GFI and AGFI can be classified as absolute indexes of fit because they compare the hypothesised model with no model at all (Hu & Bentler,

1995). Although both indexes range from zero to 1,00, the distribution of the AGFI is unknown, therefore no statistical test or critical value is available (Jöreskog & Sörbom, 1986).

The Parsimony Goodness-of-Fit Index (PGFI) addresses the issue of parsimony in SEM (Mulaik et al, 1989). The PGFI takes into account the complexity (i.e., number of estimated parameters) of the hypothesised model in the assessment of overall model fit and provides a more realistic evaluation of the hypothesised model. Mulaik et al. (1989) suggested that indices in the 0,90's accompanied by PGFI's in the 0,50's are not unexpected, however, values > 0,80 are considered to be more appropriate (Byrne, 2001).

The Normed Fit Index (NFI) is used to assess global model fit. The NFI represents the point at which the model being evaluated falls on a scale running from a null model to perfect fit. This index is normed to fall on a 0 to 1 continuum.

The Comparative Fit Index (CFI) represents the class of incremental fit indices in that it is derived from the comparison of a restricted model (or null) model (one in which all correlations among variables are zero) in the determination of goodness-of-fit.

The Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973) is a relative measure of co-variation explained by the model that is specifically developed to assess factor models. For these fit indices (NFI, CFI and TLI), it is more or less generally accepted that a value less than 0,90 indicates that the fit of the model can be improved (Hoyle, 1995).

The RMSEA estimates the overall amount of error; it is a function of the fitting function value relative to the degrees of freedom. The RMSEA point estimate should be 0,05 or less and the upper limit of the confidence interval should not exceed 0,08 (Hu & Bentler (1999) suggested a value of 0,06 to be indicative of good fit between the hypothesised model and the observed data).

1.4 OVERVIEW OF CHAPTERS

In Chapter 2, the relationship between job characteristics, burnout and strain are discussed. The chapter also deals with the empirical study. Chapter 3 will deal with the discussion, limitations, and recommendations of this study.

1.5 CHAPTER SUMMARY

This chapter discussed the problem statement and research objectives. The measuring instruments and research method used in this research were explained, followed by a brief overview of the chapters that follow.

Farber, B.A. (1984). Teacher burnout: Assumptions, myths, and issues. *Teachers College Record*, 96, 321-338.

Freudenberger, H.J. (1974). Staff burn-out. *Journal of Social Issues*, 30(1), 159-166.

Friedman, I.A. (2000). Burnout in Teachers: Shattered dreams of impeccable professional performance. *JCLP/In Session: Psychotherapy in Practice*, 56, 595-606.

- Gold, Y. (1985). Burnout: A major problem for the teaching profession. *Education*, 104, 271-274.
- Hoyle, R.H. (1995). The structural equation modelling approach: Basic concepts and fundamental issues. In R.H. Hoyle (Ed.), *Structural equation modelling Concepts, issues, and applications* (pp. 1-15). Thousand Oaks, CA: Sage.
- Hu, L.-T. & Bentler, P.M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modelling A Multidisciplinary Journal*, 6, 1-55.
- It can be worse in the townships. (2002, December 2). *Pretoria News*, p. 2.
- Jackson, S.E. & Schuler, R.S. (1983). Preventing employee burnout. *Personnel*, March-April, 58-68.
- Jacobs, E. (2002, December 2). Many say they are overwhelmed by work – Stress takes big toll on teachers. *Pretoria News*, p. 1.
- Jacobs, E. (2002, December 2). Why they suffer so much stress. *Pretoria News*, p 2.
- Jenkins, S. & Calhoun, J.F. (1991). Teacher stress: Issues and intervention. *Psychology in the Schools*, 28, 60 – 67.
- Jex, S.M. & Beehr, T.a. (1991). Emerging theoretical and methodological issues in the study of work-related stress. *Research in Personnel and Human Resources Management*, 9, 311-365
- Jöreskog, K.G. & Sörborn, D. (1993). *LISREL 8: Structural equation modelling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Kahn, R., & Byosiere, P. (1990). Stress in organizations. In M. Dunnette & L. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (2nd ed., Vol. 3, p571-650). Palo Alto, CA: Consulting Psychologists Press.
- Karasek, R. (1979). Job demands, job decision attitudes, and mental strain: implications for job redesign. *Administrative Science Quarterly*, 24, 285-310.
- Kreitner, R. & Kinicki, A. (2001). *Organizational behavior* (5th ed.). New York: McGraw-Hill.
- Levert, T., Lucas, M. & Ortlepp, K. (2000). Burnout in psychiatric nurses: Contributions of the work environment and a sense of coherence. *Psycho???????*, 30(2), 36-42.
- Maslach, C. & Jackson, S.E. (1984). Patterns of burnout among a national sample of public contact workers. *Journal of Health Resources Administration*, 7, 184-212.

- Maslach, C. & Jackson, S.E. (1986). *The Maslach Burnout Inventory* (2nd ed.). Palo Alto, CA: Consulting Psychologists.
- Maslach, C. (1976). Burned-out, *Human Behavior*, 5, 16-22.
- Maslach, C. (2000). A multidimensional theory of burnout. In C.L. Cooper, *Theories of Organizational Stress*, (pp. 68-87). New York, Oxford University Press.
- Maslach, C. Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Reviews of Psychology*, 52, 397-422.
- Maslach, C., Jackson, S.E. & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- McDonald, M.E.W. & Van der Linde, C.H. (1993). Die rol en taak van die onderwyser as potensieële bronne van stres vir die onderwyser. *Educare*, 22(1&2), 134-143.
- Mesthri, R. (1999). The role of principals in the management of stress and burnout. *Education Practice*, 3, 19-23.
- Mulaik, S.A., James, L.R., Van Alstine, J., Bennett, N., Lind, S. & Stillwell, C.D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, 105, 430-445.
- Myburgh, C.P.H. & Poggenpoel, M. (2002). Teachers' experience of their school environment – implications for health promotion. *Education*, 23(2), 260-279.
- Pines, A.M. (2002), Teacher burnout: A psychodynamic existential perspective. *Teachers and Training: Theory and Practice*, 8(2), 121- 140.
- Pretoria Correspondent, (2000, May 30). Stressed or not, absent teachers won't get paid. *The Star*, p. 8.
- SAS Institute. (2000). *The SAS system for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- Schaufeli, W.B. & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W.B., Leiter, M.P., Maslach, C. & Jackson, S.E. (1996). MBI-General Survey. In C. Maslach, S.E. Jackson, & M.P. Leiter (Eds.), *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Schaufeli, W.B., Leiter, M.P., Maslach, C. & Jackson, S.E. (1996). MBI-General Survey. In C. Maslach, S.E. Jackson, & M.P. Leiter (Eds.), *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

- Schaufeli, W.B., Martinez, I.M., Pinto, A.M., Salanova, M. & Bakker, A.B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, 33, 464-481.
- Smith, R.E. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport*
- Sparks, K. & Cooper, C.L. (1999). Occupational differences in the work-strain relationship: Towards the use of situation-specific models. *Journal of Occupational and Organizational Psychology*, 72, 219-229.
- Spector, P.E. (2000). *Industrial and organizational psychology: Research and practice* (2nd ed.). New York: John Wiley.
- Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Tucker, L.R. & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38, 1-10.
- Van Zyl, E. & Pietersen, C. (1999). An investigation into work stress experienced by a group of secondary school teachers. *South African Journal of Education*, 19(1), 74-78.
- Whitehead, A., Ryba, K., & O'Driscoll, M. (2000). Burnout among New Zealand primary school teachers. *New Zealand Journal of Psychology*, 29(2), 52-60.
- Workload. (2002, December 9). *Natal Witness*, p. 9.

CHAPTER 2

RESEARCH ARTICLE 1

BURNOUT IN PRIMARY SCHOOL TEACHERS IN THE NORTH WEST PROVINCE

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ABSTRACT

The objective of this research was to investigate the job characteristics associated with burnout as well as the burnout-strain relationship among primary school teachers in the North West Province. A cross-sectional survey design was used. Stratified random samples ($n = 646$) were taken of primary school teachers in the North West Province. The Maslach Burnout Inventory-General Survey, Job Characteristics Scale and the Your Health Questionnaire were used as measuring instruments. The results showed that overload leads to exhaustion, which leads to cynicism and in turn to low professional efficacy. Job resources was found to be related to all three dimensions of burnout, while rewards played a moderating effect between both overload and exhaustion, and job resources and burnout. Exhaustion and professional efficacy lead to physical and psychological strain.

OPSOMMING

Die doelstelling van hierdie navorsing was om die werkseienskappe te ondersoek wat met uitbranding geassosieer word, asook die uitbranding-spanning-verhouding onder laerskoolonderwysers in die Noordwes-Provinsie. 'n Dwarsnee-ontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($n = 646$) is geneem van onderwysers in die Noord-Wes Provinsie. Die Maslach-Uitbrandingsvraelys-Algemene Opname, die Werkseienskappe-Vraelys en Jou Gesondheid-Vraelys is as meetinstrumente gebruik. Die resultate het getoon dat oorlading tot uitputting lei, wat tot sinisme lei en wat weer tot gebrek aan professionele bekwaamheid lei. Beperkte werks hulppronne lei tot hoër vlakke van uitputting en sinisme en laer vlakke van professionele bekwaamheid. Belonings het 'n modererende effek tussen oorlading en uitputting asook werks hulppronne en uitbranding. Uitputting en laer vlakke van professionele bekwaamheid lei tot fisiese en psigologiese spanning.

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The teaching profession is generally regarded as one of the most stressful occupations in the world. This is largely due to the fact that the teaching profession is an emotionally draining profession (McDonald & van der Linde, 1993). Although stress is a common phenomena in any profession, the transformation of the education sector without any support structures in place have placed extra strain on teachers. This is even more so in South Africa, where vast changes took place during the past decade. Apart from broad changes such as affirmative action, democracy and diversity, some of the changes that the teaching profession has experienced include the move from nineteen departments of education to one national department and nine provincial departments of education as well as mono-cultural schools, which have become multicultural schools (Myburgh & Poggenpoel, 2002). Other changes, which have placed a lot of pressure on teachers include the rationalisation process, retrenchment and redeployment of teachers.

Apart from the pressures of a changing country, teaching is in itself an incredibly demanding occupation, and over the recent years these demands have increased. According to McDonald and Van der Linde (1993), primary school teachers sometimes have to handle very large classes of approximately 40 pupils, which places a lot of pressure on the teacher. Teachers are faced with various tasks to complete, pupils to attend to and conflicting demands. Furthermore, as a result of the policy changes and transformation in the education sector, various other stressors exist in the teaching domain, such as a lack of discipline in schools, an increasing workload, low pay and various other conditions (Jacobs, 2002). All these factors lead to teachers becoming frustrated because they feel unaccomplished and eventually exhausted and burned out.

A number of studies on burnout have been conducted in the teaching profession, probably because it is one of the largest and most visible professions in society (Whitehead, Ryba & O'Driscoll, 2000) and is arguably one of the largest homogeneous occupational groups investigated in burnout research (Pines, 2002). The results of these studies have shown that large numbers of teachers are experiencing stress and burnout (Burke & Greenglass, 1995; Friedman, 2000; Whitehead et al., 2000) and that burnout among teachers is still on the increase (Whitehead et al., 2000). All these aspects have a troublesome impact on the

education field. Burned out teachers are less motivated, put in less effort and are less patient and optimistic. As a result of these effects, burnout is very costly for teachers, pupils, schools and the society (Pines, 2002). Burned out teachers experience adverse effects and could have a significantly negative effect pupils' growth and learning capacity. Teachers also feel that they can no longer give themselves to the students as they once could and as a result, they begin to experience negative feelings and display negative reactions toward their students (Whitehead et al., 2000). The increasing number of burned out teachers in South Africa can lead to a decline in education, in turn affecting the future of our country. There is, however, a lack of research on teacher burnout in South Africa, which is mainly due to the country's multicultural society.

A mere 25 years ago burnout was an unheard-of topic - now it is a widely researched phenomenon that is primarily characterised by physical and emotional depletion (Maslach, Schaufeli & Leiter, 2001). Schaufeli and Enzmann (1998) define burnout as a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work. Burned out workers show a lack of commitment and are less capable of providing adequate services, especially decision-making and initiating involvement with clients (Levert, Lucas, Ortlepp, 2000).

According to Cordes and Dougherty (1993) and Schaufeli and Enzmann (1998), burnout develops as a reaction to particular job stressors and certain job characteristics could lead to higher levels of burnout. Job characteristics are stressors, which are associated with the performance of specific tasks that make up an individual's job (Kahn & Byosiere, 1990). These include the level of the job complexity, the variety of tasks performed, the amount of discretion and control that individuals have over the pace and timing of their work, and the physical environment in which the work is performed. Stressful job characteristics that teachers experience is an overload of excessive paper and test work, lack of feedback from colleagues, administration problems, and poor working conditions (Whitehad et al., 2000; Pines, 2002). Role conflict, uncertainty, an unsatisfactory classroom climate, low decision-

making powers and little support are also related to burnout (Van der Linde, Van der Westhuizen & Wiessing, 1999).

According to Maslach (2000), prolonged exposure to chronic negative job characteristics leads to burnout, but burnout could also be an important mediator with various outcomes, one of them being the experience of strain (Maslach et al., 2001). It is important to differentiate between stressors, stress and strain. Stressors are the stress-producing events or conditions in the work environment, while strains refer to the individuals' responses to such stressor stimuli that are deemed harmful to themselves (such as poor mental or physical health or wellbeing). Stress is a more general term describing situations in which stressors and strains are present (Beehr, 1998). The work stressors may influence the workers' levels of strain (Cooper, Dew & O'Driscoll, 2001).

Based on the above discussion, it is clear that certain job characteristics could lead to burnout and that burnout itself could again lead to the experience of strain. The objective of this study is to determine which job characteristics could lead to burnout and to determine the relationship between burnout and strain within the teaching profession.

Burnout, job characteristics, and strain

Research on burnout dates back to the 1970's (Freudenberger, 1974; Maslach, 1976) and initially only concentrated on caregiving and service occupations. The Maslach Burnout Inventory – Human Services Survey (MBI-HSS) (Maslach & Jackson, 1981, 1986) was used to measure burnout in the human service sector. However, Schaufeli Martineq, Pinto, Salavona and Bakker (2002) explain that burnout is no longer restricted to the caring professions, and that all types of professions and occupational groups can experience burnout. The measuring of burnout in other professions with the use of the MBI-HSS led to psychometrical problems, and therefore an instrument that would measure burnout across the spectrum of professions was necessary. Schaufeli, Leiter, Maslach and Jackson (1996) recently developed the Maslach Burnout Inventory – General Survey (MBI-GS), which is

an adapted version of the MBI for use outside human services. The MBI-GS consists of the following three dimensions:

- **Exhaustion** refers to feelings of fatigue, but without reference to people as the source of those feelings;
- **Cynicism** can be seen as an indifference or aloof attitude towards one's work in general where the items refer to work itself rather than to recipients of one's service or personal relationships at work;
- **Professional Efficacy** encompasses both social and non-social accomplishments at work.

Burnout is an individual experience that is specific to the work context (Maslach et al., 2001). Various possible causes of burnout have been investigated, such as individual characteristics, which include demographic characteristics, personality characteristics and job attitudes (Maslach, et al., 2001). Other situational factors have been researched as possible causes of burnout as well, like occupational characteristics and organisational characteristics. Recently job characteristics have also been identified to influence burnout (Maslach, et al., 2001).

According to Maslach et al., (2001), job characteristics can be divided into job demands and lack of resources. Job demands are those aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Demerouti, et al., 2001). Various types of job demands, such as work-overload, time pressures and various task characteristics have been found to be related to burnout, especially the exhaustion dimension (Maslach et al., 2001). Job resources, the second dimension of job characteristics, refers to those aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal growth and development (Demerouti et al., 2001). The absence of job resources, such as the lack of social support, lack of job security, few rewards for work done and low participative management has also been linked to burnout through recent research (Maslach et al., 2001). A lack of feedback and control are

other job resources that are related to burnout, as well as the degree of decision-making power influences and a lack of autonomy (Maslach et al., 2001).

To test the relationship of job demands and resources with burnout, Demerouti et al., (2001) developed the Job Demands-Resources (JD-R) model of burnout. Their findings suggest that high job demands will lead to the experience of increased exhaustion. When job resources are lacking, they predict high levels of disengagement (that closely resemble cynicism as measured by the MBI-GS).

Various types of job demands, such as work-overload, time pressures and various task characteristics have been found to be related to burnout, especially the exhaustion dimension (Maslach et al., 2001). Workload is a main stressor for many workers and both work-overload as well as work-underload can cause burnout. Cooper, et al., (2001) explain that workload can be divided into quantitative and qualitative. Quantitative workload is the amount of work required and the time frame in which the work must be done. Qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs (Cooper et al., 2001).

Job resources, the second dimension of job characteristics, refers to those aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal growth and development (Demerouti et al., 2001). The absence of job resources, such as the lack of social support, lack of job security, few rewards for work done and low participative management has also been linked to burnout through recent research done by Maslach et al., (2001). A lack of feedback and control are other job resources that are related to burnout, as well as the degree of decision-making power influences and a lack of autonomy (Maslach et al., 2001).

The presence of job demands and lack of resources is also applicable to the teaching profession. Teachers are faced with various work demands. They are regularly forced to work excessive hours and have to take large amounts of work home at night and over weekends. The wide range of pupil abilities present in one class requires more in-depth

lesson planning, which contributes to the high levels of work overload in the teaching profession (Travers, 2001). Resources greatly influence the way teachers experience their job. Many schools are faced with poor physical working conditions, inadequate school buildings and equipment, unpleasant work environment and small classrooms (Travers, 2001). Outside school bodies expect teachers to make use of modern methods, but seldom is the adequate equipment made available for the job.

Job demands and a lack of resources might be related to one or more of the three dimensions of burnout. According to Leiter (1991), job demands and resources are differently related to the three dimensions of burnout. Job demands (such as work overload and interpersonal conflicts) are related to emotional exhaustion, while resources (such as supervisor and co-worker support and job autonomy) are related to depersonalisation and reduced personal accomplishment. Janssen, Schaufeli and Houkes (1999) found that emotional exhaustion is primarily associated with work overload, and as a result of the affect of this demand the employees experience emotional depletion. The more support employees receive - or perceive to receive - from supervisors and/or co-workers, the less emotional exhaustion will be experienced (Janssen, et al., 1999). Relationships have also been found between burnout and poor job resources, such as lack of social support (Leiter, 1991, Leiter & Maslach, 1988). It is therefore clear that job characteristics (consisting out of job demands and a lack of resources) could lead to burnout. However, the experience of burnout also have various negative outcomes, one of them being strain (Maslach et al., 2001).

According to Jex and Beehr (1991) the major job strains can be classified as psychological, physical and behavioural. Psychological job strains are the emotional reaction and attitudinal reaction (such as job dissatisfaction) to the job stressor. Psychological/emotional effects include general uneasiness, depression, nervousness, anxiety and loss of confidence (Jenkins & Calhoun, 1991). The second type of strain, physical strain, is a physiological reaction, which can be long or short-term based. Maslach (2000) explains that the long-term strain is a physical illness, such as heart disease as a result of stress. Short-term strains can be an increase in blood pressure or suppression of the immune response. Jenkins and

Calhoun (1991) describe physical strain as frequent headaches, sleep disturbances, hypertension, fatigue and tightening of muscles. Behavioural strains are the various types of behaviour caused in response to the job stressor, such as seeking other employment. Research on behavioural strains is lacking and this study will therefore focus on psychological and physical strain. Regarding the relationship between burnout and strain, the exhaustion component of burnout has been found to be more predictive of stress-related health outcomes (physical and psychological strain) than cynicism and professional efficacy (Maslach et al., 2001). Parallel findings have also been found for the link between burnout and various forms of substance abuse, such as alcohol abuse (Maslach et al., 2001).

The above discussion leads to the following hypotheses:

- H1: Various job characteristics will lead to increased levels of burnout. Job characteristics will consist out of job demands and a lack of resources. High levels of job demands will increase feelings of exhaustion, while lack of resources will decrease professional efficacy.
- H2: High levels of exhaustion will lead to psychological and physical strain.

METHOD

Research design

A survey design was used to obtain the research objectives. The specific design is the cross-sectional design, whereby a sample is drawn from a population at one time and a field experiment will be conducted to ensure that the conclusions that are obtained can be generalised more effectively to the whole population (Spector, 2000). This design is also used to determine the interrelationships among variables within a population and will thus help to achieve the various specific objectives of the research. According to Byrne (2001) a cross-sectional design is the most appropriate design for the validation of the MBI and structural equation modelling will adhere to any problems that could be linked with this

design. This design is also used to determine the interrelationships among variables within a population and will thus help to achieve the various specific objectives of the research.

Study population

The participants used in the research were selected randomly from the population. Spector (2000) states that the random process increases the accuracy of the conclusions made regarding the whole group. A stratified, random sample was taken of teachers in public schools in the North West Province in South Africa. The strata used was then divided into three groups namely 1) the district (there are 12 districts in the province), 2) the type of school according to funding, and 3) the size of the school. Table 1 presents some of the characteristics of the participants.

Table 1
Characteristics of the Participants

Item	Category	Percentage
Gender	Male	26,84
	Female	73,16
Marital Status	Single	19,87
	Engaged/in a relationship	3,44
	Married	48,98
	Divorced	22,85
	Separated	3,60
	Remarried	1,25
	Qualification	M + 3 (e.g. Matric + diploma)
	M + 4 (e.g. Matric + Higher diploma or degree – BA)	47,14
	M + 5 (e.g. Matric + Higher diploma + degree Hons, BA, B.Ed)	14,12
	M + 6 (e.g. Matric + Higher diploma + degree MA, M.Ed)	0,76
Language	Afrikaans	21,60
	English	0,94
	Sepedi	3,64
	Sesotho	15,96
	Setswana	50,55
	ItSwati	0,94
	Tshivenda	0,16
	IsiNdebele	0,63
	IsiXhosa	4,07
	IsiZulu	1,41
	IsiTsonga	0,16
	Job level	Level 1
Level 2		15,45
Level 3		6,99
Level 4		1,46

According to Table 1, the majority of participants were female (73,16%) and married (48,98%). A total of 47,14% of the participants possess a *M + 4 qualification* (Matric and four years higher diploma or degree). Just over half the participants (50,55%) speak Setswana as a first language, while only 0,94% has English as their home language. The majority of the participants (76,10%) work on level 1, while only 1,46% on level 4.

Measuring battery

The following questionnaires were utilised in the empirical study:

- The *Maslach Burnout Inventory-General Survey* (Schaufeli, Leiter, Maslach & Jackson, 1996) was used to measure burnout. The MBI-GS consists of 16 items which then produces three scores: 1) Exhaustion (Ex) (five items; e.g. "I feel used up at the end of the workday"), 2) Cynicism (Cy) (five items; e.g. "I have become less enthusiastic about my work") and 3) Professional Efficacy (PE) (six items; e.g. "In my opinion, I am good at my job"). Schaufeli et al. (1996) reported that internal consistencies (Cronbach coefficient alphas) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy). All items are scored on a 7 point frequency rating scale ranging from 0 ("never") to 6 ("always"). High scores on Exhaustion and Cynicism and low scores on Professional Efficacy are indicative of burnout. In addition, the items of the Depersonalisation sub-scale of the Maslach Burnout Inventory – Educator Survey (MBI-ES) is used to determine distant feelings and impersonal response towards recipients of the teachers' service.
- *The ASSET* (Cooper & Cartwright, 2001) was used to measure the levels of health among the primary school teachers. Cooper and Cartwright (2001) designed the ASSET as an initial screening tool, which is based on a large body of academic and empirical research, in order to help organisations assess the risk of stress in their workforce. The ASSET is divided into four questionnaires, of which the fourth is a biographical questionnaire. The first questionnaire measures the individual's perception of his or her job; the second questionnaire measures the individual's attitude toward his or her organisation, and the third questionnaire, "*Your Health*", assesses the respondent's level of health. It consists of 19 items arranged on two subscales, Physical Health and Psychological Wellbeing. According to the Asset model and the research on which it is based, poor employee health can indicate excessive workplace pressure and experienced stress, which can be used to ascertain if workplace pressures have positive and

motivating or negative and damaging effects. The two subscales are physical health and psychological wellbeing. All the items on the physical health subscale relate to physical symptoms of stress. The role of this subscale is to give an insight into physical health, not an in-depth clinical diagnosis. The items listed on the psychological wellbeing subscale are symptoms of stress induced mental ill health. Reliability is based on Guttman split-half coefficient. All but two factors returned coefficients in excess of 0,70, ranging from 0,60 to 0,91 (Cooper & Cartwright, 2001).

- The *Job Characteristics Scale* (JCS) was used to measure the specific job characteristics within the teaching profession. This questionnaire was developed by the authors to measure job demands and job resources for teachers. The JCS consists of 48 items and the questions are rated on a 4-point scale ranging from 1 (“never”) to 4 (“always”). The dimensions of the JCS include pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communications, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities.

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000). Principal factor extraction with varimax rotation was performed through SAS FACTOR on the items of the MBI-GS, Job Characteristics Scale, and Your Health (third questionnaire of the ASSET) performing structural equation modelling. Principal components extraction were used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Furthermore, the oblique method with a promax rotation was used to determine the interfactor correlations of each measuring instrument. Correlations higher than 0,30 were extracted as the factor structure.

Cronbach alpha coefficients and inter-item correlations were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. According to Clark and Watson (1995), the average inter-item correlation coefficient (which is a straightforward measure of internal consistency) is a useful index to supplement information supplied by coefficient alpha. However, unidimensionality of a scale cannot be ensured simply by focusing on the mean inter-item correlation – it is necessary to examine the range and distribution of these correlations as well.

The level of statistical significance was set at $p \leq 0,05$. Effect sizes were used to decide on the significance of the findings. Pearson and Spearman product-moment correlation coefficients were then used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

Canonical correlation was used to determine the relationships between job characteristics and burnout and between burnout and strain. The goal of canonical correlation was to analyse the relationship between two sets of variables (Tabachnick & Fidell, 2001). Canonical correlation is considered a descriptive technique rather than a hypothesis-testing procedure.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) were used to test the factor structures of the questionnaires and to construct a causal model of burnout. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). A structural equations approach allows a model to be stipulated in advance of the data being examined. The model was then tested for its goodness-of-fit to the covariance matrix of the measured variables, using a number of testing procedures. Competing models were also tested, and decisions were made about the model, which is most appropriate for the data set (Deary et al., 1996). The goodness-of-fit indices that were used to summarize the degree of correspondence between the implied and observed co-

variance matrices included the χ^2 goodness-of-fit statistic, χ^2 / degrees of freedom ratio (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Parsimony Goodness-of-Fit index (PGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA).

RESULTS

Principal components extraction through SAS FACTOR was used in an initial run to estimate the number of factors of the Job Characteristics Scale (JCS). Twelve factors with eigen values larger than one were obtained, and the scree plot also showed a sharp break after the twelfth factor. However, based on the rotated factor pattern, only six factors were extracted. A principle components analysis with a varimax rotation was performed on the 48 items. The results of the factor analysis for the JCS are presented in Table 2. Loadings of variables on factors, communalities and percent of variance and co-variance are shown in Table 2. Variables are ordered and grouped by size of loading to facilitate interpretation. Loadings under 0,40 (20% of variance) are replaced by zeros. Labels are suggested for each factor in a footnote.

Table 2

Factor Loadings, Communalities (h²), Percentage Variance and Co-variance for Principal Factor Extraction and Varimax Rotation on JCS items

Item	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	h ²
30. Information from supervisor of how well work is being done	0,73	0,00	0,00	0,00	0,00	0,00	0,00	0,56
29. Sufficient information on the results of work	0,73	0,00	0,00	0,00	0,00	0,00	0,00	0,56
28. Sufficient information of the purpose of work	0,67	0,00	0,00	0,00	0,00	0,00	0,00	0,52
24. Appreciation experienced from supervisor	0,63	0,00	0,00	0,00	0,00	0,00	0,00	0,52
27. Knowledge of supervisors thoughts on performance	0,59	0,00	0,00	0,00	0,00	0,00	0,00	0,37
31. Informed about important issues within education department	0,53	0,00	0,00	0,00	0,00	0,00	0,00	0,36
23. Relationship with supervisor	0,48	0,00	0,00	0,00	0,00	0,00	0,00	0,51
34. Discussion of work problems with supervisor	0,46	0,00	0,00	0,00	0,00	0,00	0,00	0,32
25. Knowledge of what others expect regarding work	0,44	0,00	0,00	0,00	0,00	0,00	0,00	0,25
35. Participation of decisions about nature of work	0,43	0,00	0,00	0,00	0,00	0,00	0,00	0,34
33. Clarity of whom to address within education department	0,41	0,00	0,00	0,00	0,00	0,00	0,00	0,44
14. Feelings of achievement	0,00	0,63	0,00	0,00	0,00	0,00	0,00	0,51
15. The possibility of independent thought and action	0,00	0,60	0,00	0,00	0,00	0,00	0,00	0,45
16. Freedom in carrying out work activities	0,00	0,55	0,00	0,00	0,00	0,00	0,00	0,44
13. Opportunities for personal growth and development	0,00	0,54	0,00	0,00	0,00	0,00	0,00	0,41
12. Enough variety in work	0,00	0,43	0,00	0,00	0,00	0,00	0,00	0,23
11. Sufficient demands on all skills and capacities	0,00	0,42	0,00	0,00	0,00	0,00	0,00	0,26
17. Influence in the planning of work	0,00	0,41	0,00	0,00	0,00	0,00	0,00	0,23
45. Enough pay for work done	0,00	0,00	0,83	0,00	0,00	0,00	0,00	0,70
44. Live comfortably on pay	0,00	0,00	0,77	0,00	0,00	0,00	0,00	0,60
46. Possibility to progress	0,00	0,00	0,69	0,00	0,00	0,00	0,00	0,55
43. Thoughts on salary from department of education	0,00	0,00	0,68	0,00	0,00	0,00	0,00	0,45
2. Work under time pressure	0,00	0,00	0,00	0,59	0,00	0,00	0,00	0,37
9. Emotionally upsetting situations arising from work	0,00	0,00	0,00	0,56	0,00	0,00	0,00	0,40
4. Attentiveness to multiple things simultaneously	0,00	0,00	0,00	0,51	0,00	0,00	0,00	0,27
7. Confrontation with personally affecting aspects from work	0,00	0,00	0,00	0,50	0,00	0,00	0,00	0,32
6. Remembering many aspects regarding work	0,00	0,00	0,00	0,45	0,00	0,00	0,00	0,25
1. Excessive workload	0,00	0,00	0,00	0,44	0,00	0,00	0,00	0,26
41. Security in maintaining current job	0,00	0,00	0,00	0,00	0,90	0,00	0,00	0,84
40. Security in maintaining a job	0,00	0,00	0,00	0,00	0,75	0,00	0,00	0,59
42. Security in maintaining current function level	0,00	0,00	0,00	0,00	0,67	0,00	0,00	0,47
19. Rely on colleagues facing difficulties in work	0,00	0,00	0,00	0,00	0,00	0,58	0,00	0,42
20. Asking for help from colleagues	0,00	0,00	0,00	0,00	0,00	0,56	0,00	0,39
22. Rely on supervisor when facing difficulties in work	0,00	0,00	0,00	0,00	0,00	0,46	0,00	0,45
21. Relations with colleagues	0,00	0,00	0,00	0,00	0,00	0,45	0,00	0,32
Squared multiple correlations (SMC)	0,83	0,78	0,85	0,76	0,88	0,68	0,67	
Percentage variance	0,10	0,08	0,06	0,05	0,04	0,04	0,03	
Percentage co-variance	0,25	0,20	0,15	0,12	0,11	0,10	0,07	

a Factor labels: F₁Participative Management F₂Task Characteristics F₃Rewards F₄Overload F₅Job Security F₆Social Support

The six extracted factors accounted for 38,30% of the total variance in the data. With a cut-off value of 0,40 for inclusion of a variable in the interpretation of a factor, 13 of the 48 variables did not load on any one of the six factors.

Items loading on the first factor relates to participative management in the teaching profession. It deals with, amongst other things, the information obtained from supervisors with regards to how well the work is being done, as well as the information on the purpose and results of the teachers' work. The second factor seems to address the task characteristics that the teacher experiences within the profession. This deals with feelings of achievement, the freedom to carry out work activities, opportunities for personal growth and development as well as the influence the individual teacher has in the planning of his/her work. The third factor deals with rewards, and includes the ability to live comfortably on the pay received, the possibility to progress, and thoughts on salary received from the department of education.

The fourth factor is related with work overload. The items loading on this factor include working under time pressure, experiencing emotionally upsetting situations arising from work, as well as excessive workload. The fifth factor, job security, includes how secure the individual feels about remaining in his/her current job and at their specific level. The sixth factor relates to the level of social support that the teacher receives, and according to the items includes relying on colleagues and supervisors when facing difficulties in work, as well as the relations with colleagues.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) were used to test the factorial model for the MBI-GS (burnout) and Your Health Questionnaire (strain). In addition to the Cynicism scale of the MBI-GS, it was decided to include the Depersonalisation scale of the MBI-ES (Educator Survey). Cynicism refers to the indifference or aloof attitude that an individual expresses towards work in general, whereas depersonalisation refers to the expression of these attitudes towards his/her service or personal relationships (e.g. pupils and colleagues). Therefore, depersonalisation was included in the subsequent analysis. Before performing SEM, the frequency distribution of

the items of the questionnaires were checked in order to assess deviations from normality and multivariate outliers were removed.

Data analyses proceeded as follows: Firstly, a quick overview of each model fit was done by looking at the overall χ^2 -value, together with its degrees of freedom and probability value. Global assessments of model fit were based on several goodness-of-fit statistics (χ^2 , χ^2 /df, GFI, AGFI, PGFI, NFI, TLI, CFI and RMSEA); secondly, given findings of an ill-fitting initially hypothesised model, analyses proceeded in an exploratory mode. Possible mis-specifications as suggested by the so-called modification indices were looked for, and eventually a revised, re-specified model was fitted to the data.

Table 3

The Goodness-of Fit Statistics for the MBI-GS and Your Health Questionnaire

Model	χ^2	χ^2 /df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
MBI-GS (Cy): Model 1	376,24	3,73	0,93	0,91	0,69	0,83	0,84	0,87	0,07
MBI-GS (Cy): Model 2	297,89	3,42	0,94	0,92	0,68	0,86	0,87	0,90	0,06
MBI-GS (Cy): Model 3	282,99	3,29	0,94	0,92	0,68	0,87	0,88	0,90	0,06
MBI-GS (Cy): Model 4	170,98	2,34	0,96	0,95	0,67	0,91	0,94	0,95	0,05
MBI-GS (Dep): Model 1	374,09	3,70	0,93	0,91	0,69	0,83	0,84	0,87	0,07
MBI-GS (Dep): Model 2	300,83	3,01	0,94	0,92	0,70	0,86	0,88	0,90	0,06
MBI-GS (Dep): Model 3	202,79	2,39	0,96	0,94	0,68	0,90	0,93	0,94	0,05
Strain: Model 1	225,80	3,53	0,95	0,93	0,67	0,93	0,93	0,95	0,06
Strain: Model 2	198,44	3,15	0,95	0,93	0,66	0,94	0,94	0,96	0,06
Strain: Model 3	179,07	2,89	0,96	0,94	0,65	0,94	0,95	0,96	0,05

The statistically significant χ^2 value of 376,24 (df = 101; $p = 0,00$) for the first model of the MBI-GS (Cynicism) revealed a relatively poor overall fit of the originally hypothesised model. The other goodness-of-fit indices also indicate model miss-fit and fail to confirm the hypothesised model. Modification indices (regression weights and co-variances) were

considered in order to determine a better model fit to the data. After Item 13 and Item 11 was removed and errors was allowed to correlate between Items 4 and 5 and Items 9 and 10, the χ^2 value of 170,98 (df = 101; $p = 0,00$) and other goodness-of-fit indices indicates an acceptable fit of the model to the data. Since this model fit was satisfactory, no further modifications of the model were deemed necessary.

After testing the hypothesised MBI model (Depersonalisation), the χ^2 value of 374,09 (df = 101; $p = 0,00$) and other goodness-of-fit indices revealed a relatively poor overall fit of the originally hypothesised MBI-GS model. However, after looking at the modification indices, or more specifically the regression weights and co-variances, it was decided to delete Item 17 and to allow errors to correlate between Items 9 and 10 and Items 14 and 15. The χ^2 value of 202,79 (df = 101; $p = 0,00$) and other goodness-of-fit indices indicates an acceptable fit of the model to the data. Since this model fit was satisfactory, no further modifications of the model were deemed necessary.

Regarding the factor structure of the Your Health Questionnaire (strain), a 2-factor model was confirmed, consisting out of Physical and Psychological Strain. The χ^2 value of 225,80 (df = 64; $p = 0,00$) and other fit indices revealed a relative good fit of the hypothesised model to the date, although some modifications seems to be necessary for an even better fit. After the co-variances were considered, it was decided to allow correlated errors between Items 2 and 3 as well as between Items 4 and 12. The fit-statistics in Table 3 indicates excellent fit of the model to the data.

Table 4 shows the descriptive statistics, the Cronbach alpha coefficients and the mean inter-item correlation coefficients of the MBI-GS, JCS and Your Health Questionnaire.

Table 4

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlation Coefficients of the MBI-GS, JCS and Your Health Questionnaire (n = 646)

<i>Item</i>	Mean	SD	Skewness	Kurtosis	<i>r</i> (Mean)	α
MBI-GS						
Emotional exhaustion	12,63	6,82	0,15	-0,46	0,36	0,73
Cynicism	7,68	5,13	0,47	-0,43	0,3	0,63
Depersonalisation	6,28	4,88	0,95	0,95	0,29	0,61
Professional Efficacy	25,11	4,62	-1,06*	0,64*	0,34	0,70
JCS						
Participative Management	32,99	6,44	-0,43	-0,28	0,36	0,86
Task Character	21,84	4,00	-0,50	-0,30	0,34	0,78
Rewards	6,74	2,96	1,27*	0,98*	0,57	0,84
Overload	15,97	3,27	-0,02	-0,13	0,26	0,68
Job Security	9,61	2,60	-1,02*	0,08*	0,62	0,83
Social Support	13,41	2,36	-0,87	0,52	0,38	0,71
Your Health						
Physical Health	14,39	4,12	-0,13	-0,52	0,38	0,78
Psychological Health	14,53	4,80	0,40	-0,20	0,47	0,86

* High skewness and kurtosis

The scores on the MBI-GS, JCS and Your Health Questionnaire are normally distributed. The Cronbach alpha coefficients of all the measuring instruments are considered to be acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994) except for the alpha coefficients of the Cynicism and Depersonalisation scales, which are below the accepted 0,70 guideline. Because the alpha value of the Depersonalisation is the lowest, it will be disregarded from here forth in the study. Furthermore, with few exceptions, the inter-item correlations are considered acceptable compared to the guideline of $0,15 < r < 0,50$ (Clark & Watson, 1995). It appears that the MBI-GS, JCS and Your Health Questionnaire have acceptable levels of internal consistency.

Table 5

Correlation Coefficients between Burnout, Job Characteristics and Strain (n = 646)

Item	1	2	3	4	5	6	7	8	9	10
1. Exhaustion	-	-	-	-	-	-	-	-	-	-
2. Cynicism	0,50 ^{**}	-	-	-	-	-	-	-	-	-
3. Professional Efficacy	-0,27	-0,35 ⁺	-	-	-	-	-	-	-	-
4. Participative Management	-0,22	-0,19	0,35 ⁺	-	-	-	-	-	-	-
5. Task Characteristics	-0,31 ⁺	0,32 ⁺	0,47 ⁺	0,51 ^{**}	-	-	-	-	-	-
6. Rewards	-0,18	-0,09	0,05	0,19	0,19	-	-	-	-	-
7. Overload	0,40 ⁺	0,30 ⁺	-0,11	-0,12	-0,08	-0,11	-	-	-	-
8. Job Security	-0,07	-0,02	0,13	0,16	0,24	0,05	-0,08	-	-	-
9. Social Support	-0,14	-0,08	0,20	0,50 ⁺	-0,38 ⁺	0,01	-0,11	0,16	-	-
10. Physical Strain	0,38 ⁺	0,31 ⁺	-0,17	-0,13	-0,20	-0,17	0,30	0,06	-0,11	-
11. Psychological Strain	0,47 ⁺	0,41 ⁺	-0,33 ⁺	-0,20	-0,29	-0,10	0,35 ⁺	-0,07	-0,17	0,64 ⁺

* Correlation is practically significant $r > 0,30$ (medium effect)

**Correlation is practically significant $r > 0,50$ (large effect)

Table 5 indicates that Exhaustion is practically significantly related to Cynicism (large effect), positively correlated to Overload, Physical Strain and Psychological Strain (medium effect) and negatively correlated to Task Characteristics (medium effect). Cynicism is negatively related to Professional Efficacy (medium effect), and positively related to Task Characteristics, Overload, Physical Strain and Psychological Strain (medium effect). Professional Efficacy is positively related to Participative Management and Task Characteristics (medium effect) and negatively related to Psychological Strain (medium effect).

Canonical correlation using SAS CANCELL was performed between burnout, a set of job characteristics, and strain. Shown in the table are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percent of variance), redundancies and canonical correlations.

The results of the canonical analysis of job characteristics and burnout are shown in Table 6. The first set included Participative Management, Task Characteristics, Rewards,

Overload, Job Security, and Social Support. The second set included Exhaustion, Cynicism and Professional Efficacy.

Table 6

Results of the Canonical Analysis: Job Characteristics and Burnout

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Set 1: Job Characteristics				
Participative Management	-0,59	-0,22	0,37	0,34
Task Characteristics	-0,93	-0,73	0,43	0,39
Rewards	-0,25	0,02	-0,34	-0,43
Overload	0,59	0,52	0,72	0,74
Job Security	-0,11	0,07	0,18	0,13
Social Support	-0,34	0,09	0,24	0,00
Percent of variance	0,26		0,17	Total = 0,43
Redundancy	0,09		0,02	Total = 0,11
Set 2: Burnout				
Exhaustion	0,80	0,50	0,53	0,71
Cynicism	0,73	0,33	0,20	0,11
Professional Efficacy	-0,73	-0,49	0,67	0,90
Percent of variance	0,57		0,26	Total = 0,83
Redundancy	0,19		0,03	Total = 0,22
Canonical Correlation	0,58		0,34	

The first canonical correlation was 0,58 (34% overlapping variance) and the second was 0,34 (12% overlapping variance). With both canonical correlations included, $F(18, 1802) = 21,68, p < 0,0001$ for the first canonical correlation and for the second canonical correlation $F(10, 1276) = 9,66, p < 0,0001$. Data on both the canonical variates appear in Table 6. Total percentage of variance and total redundancy indicates that both pairs of canonical variates were moderately related.

With a cut-off correlation of 0,30 the variables in the job characteristics set that correlated with the first canonical variate were Participative Management, Task Characteristics, Overload and Social Support. Among the burnout variables, Exhaustion, Cynicism and Professional Efficacy correlated with the first canonical variate. The first pair of canonical

variables shows that low participative management (-0,59), uncertainty in task characteristics (-0,83), work overload (0,59) and a lack of social support (-0,34) are associated with exhaustion (0,80), cynicism, (0,73) and low professional efficacy (-0,73).

Variables in the job characteristics set that correlated with the second canonical variate were Participative Management, Task Characteristics, Rewards and Overload. Among the burnout variables, Exhaustion and Professional Efficacy correlated with the second canonical variate. The second pair of canonical variates indicates that participative management (0,37), Task characteristics (0,43), low rewards (-0,39) and overload (0,72) are associated with exhaustion (0,53) and professional efficacy (0,67).

The results of the canonical analysis of burnout and strain are shown in Table 7. The first set included Exhaustion, Cynicism and Professional Efficacy. The second set included Physical Strain and Psychological Strain.

Table 7
Results of the Canonical Analysis: Burnout and Strain

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Set 1: Burnout				
Exhaustion	0,88	0,61	0,37	0,60
Cynicism	0,77	0,36	0,06	0,06
Professional Efficacy	-0,59	-0,31	0,79	0,97
Percent of variance	0,57		0,17	Total = 0,74
Redundancy	0,26		0,01	Total = 0,27
Set 2: Strain				
Physical Strain	0,73	0,16	0,69	1,29
Psychological Strain	0,99	0,89	-0,12	-0,95
Percent of variance	0,76		0,24	Total = 1,00
Redundancy	0,23		0,00	Total = 0,23
Canonical Correlation	0,55		0,14	

The first canonical correlation was 0,55 (30% overlapping variance) and the second was 0,14 (0,02% overlapping variance). With both canonical correlations included, $F(6, 1282) =$

43,86, $p < 0,0001$ for the first canonical correlation and for the second canonical correlation $F(2, 642) = 6,34, p < 0,0019$. Data on both the canonical variates appear in Table 7. Total percentage of variance and total redundancy indicates that both pairs of canonical variates were moderately related.

With a cut-off correlation of 0,30 the variables in the burnout set that correlated with the first canonical variate were Exhaustion, Cynicism and Professional Efficacy. Among the strain variables, Physical Strain and Psychological Strain correlated with the first canonical variate. The first pair of canonical variates shows that exhaustion (0,88), cynicism (0,77) and low professional efficacy (-0,59), are associated with physical strain (0,73) and psychological strain (0,99).

Variables in the burnout set that correlated with the second canonical variate were Exhaustion and Professional Efficacy. Among the strain variables, Physical Strain correlated with the second canonical variate. The second pair of canonical variates indicates that exhaustion (0,37) and professional efficacy (0,79) are associated with physical strain (0,69).

A more comprehensive test of the hypothesised relationships can be accomplished with structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997). Data analyses proceeded as follows: Based on the results of the canonical correlations, one of the job characteristics (Job Security) was excluded from the SEM model. Furthermore, a second order factor analysis showed three factors namely Overload (similar to job demands), job resources (consisting of Participative Management, Task Characteristics and Social Support) and Rewards. A model was constructed based upon the results of the canonical correlations and the consensus of findings from a review of the burnout literature, as it bears on the teaching profession.

The fit of the hypothesised model was assessed by 1) a quick overview of the overall χ^2 value, together with its degrees of freedom and probability value; 2) global assessments of model fit based on several goodness-of-fit statistics (GFI, AGFI, PGFI, NFI, TLI, CFI and

RMSEA). Given findings of an ill-fitting initially hypothesised model, possible misspecifications as suggested by the so-called modification indexes were looked for and eventually a revised, re-specified model was fitted to the data.

The hypothesised model

The formulation of the hypothesised model is shown in Figure 1. As can be seen, burnout is represented as a multidimensional construct with Exhaustion, Cynicism and Professional Efficacy operating as conceptually distinct factors. The paths leading from Job Resources, Rewards and Overload to the three dimensions of burnout, and the paths leading from Exhaustion and Professional Efficacy to Strain reflect findings in the literature.

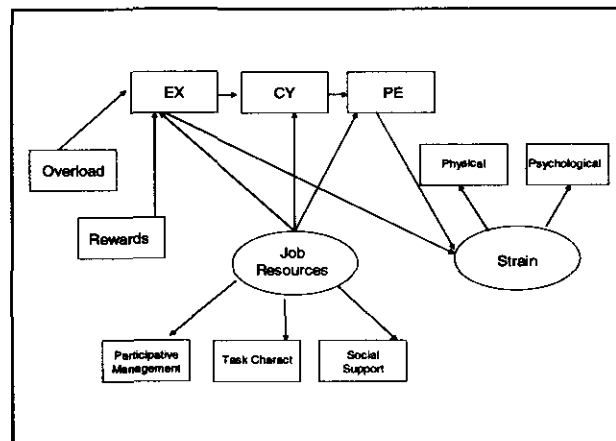


Figure 1. The hypothesised model of burnout, job characteristics and strain

Selected goodness-of-fit statistics related to the hypothesised model (Model 1) are presented in Table 8.

Table 8

The hypothesised model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Model 1	239,64	7,73	0,93	0,88	0,52	0,86	0,82	0,88	0,10
Model 2	207,29	6,91	0,94	0,89	0,51	0,88	0,84	0,90	0,10
Model 3	89,49	3,44	0,97	0,95	0,46	0,95	0,93	0,96	0,06
Model 4	84,04	3,36	0,98	0,95	0,44	0,95	0,94	0,96	0,06

The results regarding the hypothesised model is shown in Table 8 and displays the statistical χ^2 value of 239,64 (df = 31; $p = 0,00$). Together with the other goodness-of-fit indices, this indicates poor model fit of the hypothesised model to the data.

Post hoc analyses

Looking at the modification indices, the regression weights indicates that a path should be added between rewards and job resources, so Model 2 was constructed with this path added. The fit statistics of Model 2 can be seen in Table 8. Although the χ^2 value of 207,29 (df = 30; $p = 0,00$) is still high, it is considerably lower than in Model 1. The χ^2 difference between Models 1 and 2 was statistically significant ($\Delta\chi^2_{(1)} = 32,35$). However, all the other fit indices indicate problems regarding model fit. After looking at the modification indices, or more specifically the co-variances, it was decided to allow several errors to correlate. Co-variances were allowed between Participative Management and Social Support, Participative Management and Rewards, Overload and Strain, and Cynicism and Strain. With these correlated errors, Model 3 was tested.

As can be seen in Table 8, the χ^2 value of Model 3 was 89,49 (df = 26; $p = 0,00$) and is statistically lower than in Model 2 ($\Delta\chi^2_{(2)} = 117,80$). Although all the other goodness-of-fit indices indicate good model fit, the χ^2/df is still not lower than the cut-off point of 2,00. It was therefore decided to allow one more path from Overload to Rewards. The χ^2 difference between Models 3 and 4 was statistically significant ($\Delta\chi^2_{(3)} = 5,45$). All the other fit statistics (except for the χ^2/df that is still not $< 2,00$ and the PGFI that is $< 0,50$), indicate

acceptable fit of the measurement model to the data. Regarding model parsimony, it is important to look at the extent to which certain initially hypothesised paths may be irrelevant to the model. One way of determining such irrelevancy is to examine the statistical significance of all structural parameter estimates (Byrne, 2001). However, in reviewing the structural parameter estimates for Model 4, all the parameters were significant, therefore no paths were removed from the model. A schematic representation of this final model of burnout for police officers in the SAPS is displayed in Figure 2.

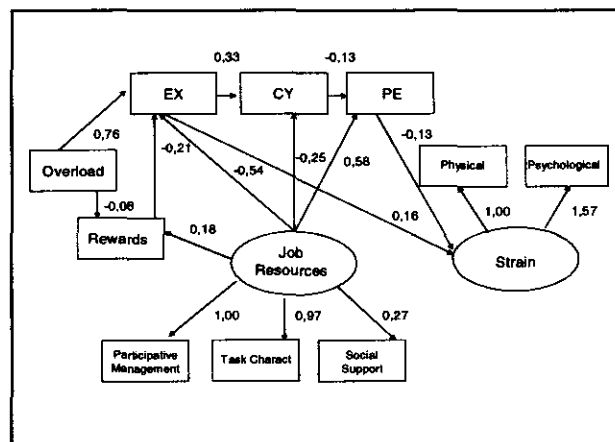


Figure 1. The final model of burnout, job characteristics and strain

According to the Squared Multiple Correlations (SMC's), their predictors account for 24,8% of the variance associated with Exhaustion: Job Resources, Rewards and Overload. Regarding Cynicism, 27,6% of the variance associated with this factor is accounted for by Job Resources and Exhaustion. Lastly, Job Resources and Cynicism account for 27,8% of the variance associated with Professional Efficacy. Exhaustion and Professional Efficacy account for 29,0% of the variance associated with Strain.

These results lead to partial support for Hypotheses 1. Overload (that is similar to job demands) did lead to Exhaustion. However, Job Resources was found to be related to all three dimensions of burnout. Support was found for Hypotheses 2. High levels of

exhaustion will lead to symptoms of both physical and psychological strain. However, it was also found that professional efficacy was linked to strain.

DISCUSSION

The first objective of this study was to determine which specific job characteristics lead to burnout. The results obtained with the product-moment correlations indicated that exhaustion is positively related to overload, while it relates negatively to task characteristics. Cynicism is positively related to task characteristics and overload. The results also identified professional efficacy to be related to participative management and task characteristics.

According to the canonical analysis of job characteristics and burnout, low levels of participative management, unclear task characteristics, low levels of social support and high levels of work overload lead to higher levels of exhaustion and cynicism and lower levels of professional efficacy. The second canonical correlation indicates that when there is high levels of participative management and clear task characteristics, higher levels of professional efficacy will be experienced. However, a lack of rewards and high work overload will lead to higher levels of exhaustion.

The structural equation analysis showed that high levels of overload will lead to exhaustion, and exhaustion will in turn lead to higher levels of cynicism. Feelings of cynicism will then again lead to lower levels of professional efficacy. This is consistent with the development sequence model of the three dimensions as proposed by Leiter and Maslach (1988). They suggest that exhaustion should appear first as chronic excessive work demands drain individuals' emotional resources. Furthermore, the model shows that low job resources and a lack of rewards will also lead to higher levels of exhaustion, cynicism and low professional efficacy.

A lack of rewards will also have a moderating effect on the relationship between overload and burnout, and job resources and burnout. Therefore, when a person is overloaded it will

lead to exhaustion, but when there is also a lack of rewards available, the level of exhaustion will increase. Also, a lack of job resources will lead to exhaustion, but if the person feels he/she doesn't get enough rewards, a further increase of exhaustion will be experienced.

The second objective of this study was to determine the relationship between burnout and strain. The results of the product moment correlations show that both exhaustion and cynicism are positively related to physical and psychological strain, while professional efficacy is negatively related to psychological strain. According to the canonical analysis of burnout and strain, high levels of exhaustion and cynicism and low levels of professional efficacy are strongly related to both physical and psychological strain. The second correlation indicates that exhaustion and professional efficacy are both positively related to physical strain. According to the SEM model, exhaustion and low levels of professional efficacy would lead to the experience of physical and psychological strain.

In conclusion, the structural equation model shows that high levels of overload will lead to exhaustion, which will lead to cynicism and then to professional efficacy. A lack of job resources, such as a lack of participative management, unclear task characteristics and a lack of social support, will lead to all three dimension of burnout. Rewards have a moderating effect between overload and exhaustion, as well as between job resources and exhaustion. High levels of exhaustion will lead to cynicism, and then to professional efficacy. This will then lead to both physical and psychological strain. Therefore, according to this model, when a person experiences high levels of overload (e.g. working under high time pressures, remembering many aspects from work and experiencing excessive workload) this person will experience feelings of exhaustion. This feelings of exhaustion will again lead to high levels of cynicism. So the person will develop a distance and aloof attitude towards his/her work. This again, will cause the person to experience low levels of professional efficacy. A low degree of job resources, such as low levels of participative management (e.g. receiving insufficient information from supervisors), unclear task characteristics (e.g. low feelings of achievement, insufficient variety in work) and a lack of social support (e.g. unable to rely on colleagues) will also lead to feelings of exhaustion.

Furthermore, if the person is not rewarded (e.g. he/she does not receive enough pay and have no possibilities to progress) this will have a moderating effect on the way in which this person will experience exhaustion. When the person experience high levels of burnout, this again will lead to high levels of strain, both physical (e.g. heart disease, ulcers, headaches and sleeping disorders) and psychological (depression, anxiety and job dissatisfaction).

The present study also has some limitations that should be considered. A cross-sectional design was used and as a result, no causal inferences could be drawn, despite the use of advanced structural equation modelling techniques. Therefore, the causal relationships between variables were interpreted rather than established, and more complex forms of non-recursive linkages could not be examined. Prospective longitudinal studies and quasi-experimental research designs are needed to further validate the hypothesised causal relationships, and therefore deal with the limitation set by using a cross-sectional design.

A staggering 0,94% of the respondents spoke English as their home language. This could have influenced the way in which the respondents answered the questionnaires as a result of misunderstandings and incorrect interpretations. Another limitation of this research is the possibility that some teachers did not trust the confidentiality clause in the letter accompanying the test booklet and could have partially or totally answered the questions inaccurately in the fear that they would be personally identified and this could have influenced the results.

RECOMMENDATIONS

The teaching profession plays a vital role in the country's education, and should therefore be extremely aware of the causes of burnout and strain in order to minimise burnout cases within the profession. Programs should be established to teach newcomers and current teachers what the symptoms of burnout are. Interventions should also be brought about whereby teachers can be taught how to reverse the effects of burnout and how to avoid strain symptoms. Although it is important to assist individual teachers whose psychological

well-being is affected by their work, an organisational rather than an individual approach is more likely to be effective, as most stressors were found to be at an organisational level.

The various job characteristics found to be associated with burnout within the teaching field, such as work overload, lack of rewards and low levels of participative management, should be reconsidered. The education department should consider either a better or alternative reward system, as this has a moderating effect on the level of exhaustion experienced by the individual teacher. The level of workload should also be reconsidered, while the resources available to the teacher should be improved in order to minimise the levels of burnout experienced by teachers in the North West Province.

Future research in South Africa needs to focus on the relative prevalence of burnout in various occupations. The differences in levels of burnout found between occupational groups may help identify occupations that are most at risk of burnout. This will also enable researchers to determine the relationship between variables, as to ascertain which variable causes burnout as well as the relationship between this variable and the remaining variables. The majority of the respondents have English as a second, or even third language, and therefore a gap exists for questionnaires to be translated into a language other than English (Afrikaans or Setswana).

References

- Arbuckle J.L. (1997). *Amos users' guide version 4.0*. Chicago, IL: Smallwaters Corporation.
- Beehr, T. (1998). An organizational psychology meta-model of occupational stress. In C. Cooper (Ed.), *Theories of Organizational stress* (pp. 6-27). New-York: Oxford University Press.
- Borg, M.G. (1990). Occupational stress in British educational settings: a review. *Educational Psychology, 10*, (2), 103-126.
- Burke, R.J. & Greenglass, E.R. (1995). A longitudinal study of psychological burnout in teachers. *Human Relations, 48*, 187-202.
- Byrne, B.M. (2001). *Structural equation modelling with Amos: Basic concepts, applications and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.
- Cohen, J., (1988). *Statistical power analysis for the behavioral sciences* (Rev. ed.). Orlando, FL: Academic Press.
- Cooper, C.L. & Cartwright, S. (1994). Healthy mind: Healthy organization – A proactive approach to occupational stress. *Human Relations, 47*, 455- 471.
- Cooper, C.L., Dewe, P.J., & O'Driscoll, M.P. (2001). *Organizational Stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Cordes, C.L. & Dougherty, T.W. (1993). A review and integration of research on job burnout. *Academy of Management Review, 18*, 621-656.
- Deary, I.J., Blenkin, H., Agius, R.M., Endler, N.S., Zealley, H. & Wood, R. (1996). Models of job-related stress and personal achievement among consultant doctors. *British Journal of Psychology, 87*, 3-29.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512.
- Freudenberger, H.J. (1974). Staff burn-out. *Journal of Social Issues, 30*(1), 159-166.

- Friedman, I.A. (2000). Burnout in Teachers: Shattered dreams of impeccable professional performance. *JCLP/In Session: Psychotherapy in Practice*, 56, 595-606.
- Jacobs, E. (2002, December 2). Many say they are overwhelmed by work – Stress takes big toll on teachers. *Pretoria News*, p. 1.
- Janssen, P.P.M., Schufeli, W.B. & Houkes, I. (1999). Work-related and individual determinants of the three burnout dimensions. *Work & Stress*, 13(1), 74-86.
- Jenkins, S. & Calhoun, J.F. (1991). Teacher stress: Issues and intervention. *Psychology in the Schools*, 28, 60 – 67.
- Jex, S.M. & Beehr, T.a. (1991). Emerging theoretical and methodological issues in the study of work-related stress. *Research in Personnel and Human Resources Management*, 9, 311-365.
- Kahn, R. & Byosiere, P. (1990), Stress in organizations. In M, Dunnette & L, Hough (Eds.). *Handbook of Industrial and Organizational Psychology* (2nd ed., Vol, 3, p571-650), Palo Alto, CA: Consulting Psychologists Press.
- Leiter, M.P. & Maslach, C. (1988). The impact of interpersonal environment of burnout and organizational commitment. *Journal of Organizational Behavior*, 9, 297-308.
- Leiter, M.P. (1991). Coping patterns as predictors of burnout. *Journal of Organizational Behavior*, 12, 123-144.
- Lever, T., Lucas, M. & Ortlepp, K, (2000). Burnout in psychiatric nurses: contributions of the work environment and a sense of coherence, *South African Journal of Psychology*, 30(2), 36-41.
- Maslach, C. & Jackson, S.E. (1981). *Maslach Burnout Inventory. Research Edition*. Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. & Jackson, S.E. (1986). *MBI: Maslach Burnout Inventory: Manual research edition*. Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. (1976). Burned-out, *Human Behavior*, 5, 16-22.
- Maslach, C. (2000). A multidimensional theory of burnout. In C.L. Cooper, *Theories of Organizational Stress*, (pp. 68-87). New York, Oxford University Press.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout, *Annual Review of Psychology*, 53, 397– 422.

- McDonald, M.E.W. & van der Linde, C.H. (1993). Die rol en taak van die onderwyser as potensiële bronne van stress vir die onderwyser. *Educare*, 22, 134-143.
- Myburgh, C.P.H. & Poggenpoel, M. (2002). Teachers' experience of their school environment – implications for health promotion. *Education*, 23(2), 260-279.
- Pines, A.M. (2002). Teacher burnout: A psychodynamic existential perspective. *Teachers and Training: Theory and Practice*, 8(2), 121- 140.
- SAS Institute. (2000). *The SAS system for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- Schaufeli, W.B. & Enzmann, D. (1998). *Burnout in the Human Services*, London: Taylor, & Francis.
- Schaufeli, W.B., Leiter, M.P., Maslach, C. & Jackson, S.E. (1996). MBI-General Survey. In C. Maslach, S.E. Jackson, & M.P. Leiter (Eds.), *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Schaufeli, W.B., Leiter, M.P., Maslach, C. & Jackson, S.E. (1996). MBI-General Survey. In C. Maslach, S.E. Jackson, & M.P. Leiter (Eds.), *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Schaufeli, W.B., Martinez, I.M., Pinto, A.M., Salanova, M. & Bakker, A.B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, 33, 464-481.
- Spector, P.E. (2000). *Industrial and organizational psychology: Research and practice* (2nd ed.). New York: John Wiley.
- Travers, C.J. (2001). *Stress in the workplace: past, present and future*. London: Whurr Publishers.
- Van der Linde, A.H., Van der Weshuizen, P.C., & Wissing, M.P. (1999). Burnout in female teachers. *South African Journal of Education*, 19(3), 192-197.
- Whitehead, A., Ryba, K., & O'Driscoll, M. (2000). Burnout among New Zealand primary school teachers. *New Zealand Journal of Psychology*, 29(2), 52-60.

CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter is comprised of conclusions regarding the literature review and the empirical study according to the specific objectives. The limitations of the research are discussed, followed by recommendations for the research problem in the organisation and lastly, suggestions are made for future research.

3.1 CONCLUSIONS

The first objective of this research was to conceptualise the relationship between job characteristics, burnout and strain in the literature. Burnout is conceptualised as a psychological syndrome in response to chronic interpersonal stressors on the job (Maslach, 2002). The three dimensions of burnout are exhaustion, cynicism and professional efficacy. Exhaustion refers to the depletion or draining of emotional resources and feelings of being overextended. Cynicism relates to the interpersonal dimension of burnout and results in a negative, callous or excessively detached response to various aspects of the job. Professional efficacy refers to the self-evaluation dimension of burnout and is a feeling of competence, productivity and achievement at work. Several factors contribute to burnout, such as coping strategies, personality factors, organisational characteristics and job characteristics. This study focused on the influence of job characteristics.

Job characteristics are stressors, which are associated with the performance of specific tasks that make up an individual's job. Maslach, Schaufeli and Leiter (2001) divided job characteristics into two groups, namely job demands and job resources. Job demands are those aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Various types of job demands, such as work-overload, time pressures and various task characteristics have been found to be related to burnout, especially the exhaustion dimension (Maslach et al, 2001). Workload is a main stressor for many workers and both work-overload and work-underload can cause burnout. Cooper, Dewe and O'Driscoll (2001) made a distinction between quantitative and qualitative workload

Quantitative workload is the amount of work required and the time frame in which the work must be done. Qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs (Cooper et al., 2001).

Job resources - the second dimension of job characteristics - refer to those aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal growth and development (Demerouti et al., 2001). The absence of job resources, such as the lack of social support, lack of job security, few rewards for work done and low participative management has also been linked to burnout through recent research done by Maslach et al. (2001). A lack of feedback and control are other job resources that are related to burnout, as well as the degree of decision-making power influences and a lack of autonomy (Maslach et al., 2001).

To test the relationship of job demands and resources with burnout, Demerouti et al. (2001) developed the Job Demands-Resources (JD-R) model of burnout. Their findings suggest that high job demands will lead to the experience of increased exhaustion. When job resources are lacking, they predict high levels of disengagement (that closely resemble cynicism as measured by the MBI-GS). According to Maslach et al. (2001), job demands and a lack of resources could lead to higher levels of burnout, but burnout could also be an important mediator with various outcomes, one of them being the experience of strain.

Strain refers to the individual's responses to such stressor stimuli that are deemed harmful to themselves (such as poor mental or physical health or well-being). The two most studied types of strain are psychological and physiological. Psychological strains strongly correlate with work-related stressors while physiological strain is a physiological reaction to stress-related situations. Regarding the relationship between burnout and strain, the exhaustion component of burnout has been found to be more predictive of stress-related health outcomes (physical and psychological strain) than cynicism and professional efficacy (Maslach et al., 2001). Parallel findings have also been found for the link between burnout and various forms of substance abuse, such as alcohol abuse (Maslach et al., 2001).

The second objective of this study was to determine which specific job characteristics lead to burnout. The results obtained with the product-moment correlations indicated that exhaustion is positively related to overload, while it relates negatively to task characteristics. Cynicism is

positively related to task characteristics and overload. The results also identified professional efficacy to be related to participative management and task characteristics.

According to the canonical analysis of job characteristics and burnout, low levels of participative management, unclear task characteristics, low levels of social support and high levels of work overload lead to higher levels of exhaustion and cynicism and lower levels of professional efficacy. The second canonical correlation indicates that when there is high levels of participative management and clear task characteristics, higher levels of professional efficacy will be experienced. However, a lack of rewards and high work overload will lead to higher levels of exhaustion.

The structural equation analysis showed that high levels of overload will lead to exhaustion, and exhaustion will in turn lead to higher levels of cynicism. Feelings of cynicism will then again lead to lower levels of professional efficacy. This is consistent with the development sequence model of the three dimensions as proposed by Leiter and Maslach (1988). They suggest that exhaustion should appear first as chronic excessive work demands drain individuals' emotional resources. Furthermore, the model shows that low job resources and a lack of rewards will also lead to higher levels of exhaustion, cynicism and professional efficacy.

A lack of rewards will also have a moderating effect on the relationship between overload and burnout, and job resources and burnout. Therefore, when a person is overloaded it will lead to exhaustion, but when there is also a lack of rewards available, the level of exhaustion will increase. Also, a lack of job resources will lead to exhaustion, but if the person feels he/she doesn't get enough rewards, a further increase of exhaustion will be experienced.

The third objective of this study was to determine the relationship between burnout and strain. The results of the product moment correlations show that both exhaustion and cynicism are positively related to physical and psychological strain, while professional efficacy is negatively related to psychological strain. According to the canonical analysis of burnout and strain, high levels of exhaustion and cynicism and low levels of professional efficacy are strongly related to both physical and psychological strain. The second correlation indicates that exhaustion and professional efficacy are both positively related to physical

strain. According to the SEM model, exhaustion and low levels of professional efficacy would lead to the experience of physical and psychological strain.

In conclusion, the structural equation model shows that high levels of overload will lead to exhaustion, which will lead to cynicism and then to professional efficacy. A lack of job resources, such as a lack of participative management, unclear task characteristics and a lack of social support, will lead to all three dimension of burnout. Rewards have a moderating effect between overload and exhaustion, as well as between job resources and exhaustion. High levels of exhaustion will lead to cynicism, and then to a low level of professional efficacy. This will result in both physical and psychological strain. Therefore, according to this model, a person who experiences high levels of overload (e.g. working under high time pressures, remembering many aspects from work and experiencing excessive workload) will experience feelings of exhaustion. These feelings of exhaustion will lead to high levels of cynicism, resulting in a distant, aloof attitude towards his/her work. This again, will cause the person to experience low levels of professional efficacy. A low degree of job resources, such as low levels of participative management (e.g. receiving insufficient information from supervisors), unclear task characteristics (e.g. low feelings of achievement, insufficient variety in work) and a lack of social support (e.g. unable to rely on colleagues) will also lead to feelings of exhaustion. Furthermore, if the person is not rewarded (e.g. he/she does not receive enough pay and have no possibilities to progress) this will have a moderating effect on the way in which this person will experience exhaustion. When the person experience high levels of burnout, this again will lead to high levels of strain, both physical (e.g. heart disease, ulcers, headaches and sleeping disorders) and psychological (depression, anxiety and job dissatisfaction).

3.2 LIMITATIONS

A cross-sectional design was conducted, and as a result, no causal inferences could be drawn, despite the use of advanced structural equation modelling techniques. Therefore, the causal relationships between variables were interpreted rather than established, and more complex forms of non-recursive linkages could not be examined. Prospective longitudinal studies and quasi-experimental research designs are needed to further validate the hypothesised causal relationships, and thus deal with the limitation set by using a cross-sectional design.

The results from this study were obtained solely by self-report questionnaires. This may lead to a problem commonly referred to as "method-variance" or "nuisance".

This research was conducted in a homogenous sample consisting of individuals of a specific profession, namely the teaching profession. It should be noted that unique characteristics probably exist within this profession, such as the specific organisational culture, which could have influenced the participants' responses. The implication is that the results could not be generalised to other contexts or professions. Therefore, there is still the need for replication in other occupational groups as well as heterogeneous samples.

English was a second or even third language to the majority of the respondents. This could have influenced the way in which the respondents answered the questionnaires, as a result of misunderstandings and incorrect interpretations.

Another limitation of this research is the possibility that some teachers did not trust the confidentiality clause in the letter accompanying the test booklet and could have partially or totally answered the questions inaccurately in the fear that they would be personally identified. Accordingly, this could have influenced the results.

6.3 RECOMMENDATIONS

The following recommendations for the organisation as well as for future research are made.

6.3.1 Recommendations for the organisation

The effective implementation of individual and school practices in order to deal with burnout depends on the headmasters' and teachers' clear and accurate understanding of the burnout phenomenon. All individuals working within the teaching environment should become aware of the causes and symptoms of burnout. This could help them become aware of their own and others' exhaustion, cynicism, and low professional efficacy, and accordingly intervene before the effects of burnout are too serious. It is also important for individuals in influential positions, such as head of departments, to be aware if they are suffering from burnout, because they may spread it to their subordinates.

Prior to teachers entering the teaching profession, training programs that focus on how to identify symptoms of burnout and emotional strain, with ongoing supervision and knowledge of effective stress management techniques could reduce burnout. Teachers currently in the profession should be offered programs as well, where they can receive education on identifying the signs and symptoms of burnout and strain and how to reverse the situation.

Burnout and poor job resources, such as lack of social support is related to burnout (Leiter, 1991, Leiter & Maslach, 1988). It is therefore clear that job characteristics (consisting out of job demands and a lack of resources) could lead to burnout. Regarding the relationship between burnout and strain, the exhaustion component of burnout has been found to be more predictive of stress-related health outcomes (physical and psychological strain) than cynicism and professional efficacy (Maslach et al., 2001).

6.3.2 Recommendations for future research

Future research in South Africa needs to focus on the relative prevalence of burnout in various occupations. The differences in levels of burnout found between occupational groups may help identify occupations that are most at risk of burnout. This will also enable researchers to determine the relationship between variables, as to ascertain which variable causes burnout as well as the relationship between this variable and the remaining variables.

A gap exists for research on burnout with the inclusion of personality dimensions. Research regarding the relationship of personality traits and burnout should be done using dispositional traits, such as the big five personality dimensions, hardiness, locus of control, self-esteem, type A behaviour, dispositional optimism and sense of coherence. This will lead to the establishment of the effects of personality differences on burnout dimensions.

Because the majority of the respondents have English as a second, or even third language, a necessity for future research regarding on burnout is for questionnaires to be translated into a language other than English (for example Afrikaans or Setswana). It is also recommended that larger samples with more powerful sampling methods be utilised to enable generalisation of the findings to other similar groups. The usage of adequate statistical methods, such as structural equation modelling, equivalence and bias analysis is recommended as well.

Recent research demonstrated that the psychometric value of the MBI-GS could be greatly enhanced by including positively phrased items of the Disengagement Scale of the Oldenburg Burnout Inventory (OLBI) (Demerouti, Bakker, Vardakou & Kantas, 2003). Disengagement is described as distancing oneself from work and experiencing negative attitudes towards work. Therefore, it is recommended that future studies on burnout in the emergency work setting include the measurement of burnout in a general occupational sense (MBI-GS) with the inclusion of the Depersonalisation scale of the MBI-HSS.

References

- Cooper, C.L., Dewe, P.J., & O'Driscoll, M.P. (2001). *Organizational Stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512.
- Leiter, M.P. & Maslach, C. (1988). The impact of interpersonal environment of burnout and organizational commitment. *Journal of Organizational Behavior, 9*, 297-308.
- Leiter, M.P. (1991). Coping patterns as predictors of burnout: The function of control and escapist coping patterns. *Journal of Organizational Behavior, 12*, 123-144.
- Maslach, C. (2000). A multidimensional theory of burnout. In C.L. Cooper, *Theories of Organizational Stress*, (pp. 68-87). New York, Oxford University Press.
- Maslach, C. Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Reviews of Psychology, 52*, 397-422.